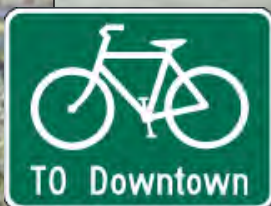


San Bernardino County Non-Motorized Transportation Plan March, 2011



Governments
SANBAG
Working Together

Prepared by San Bernardino Associated Governments ~
In collaboration with Local Jurisdictions in San Bernardino County

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Executive Summary

ES.1.0 Introduction

A safe, interconnected cycling and walking system can be a major asset to both individual communities and to an urban area, particularly one as well suited to these activities as San Bernardino County. The climate and topography are highly conducive for these and other outdoor pursuits. Both natural and man-made corridors provide ideal opportunities for development of a comprehensive system of cycling facilities, pathways, and trails. Even though San Bernardino County is known for its recreational opportunities, such a system is not well developed in many areas of the County.

However, progress is being made. In 2001, the combined total of centerline miles of bicycle infrastructure for all jurisdictions was 53 miles. As of 2011, the combined total of centerline miles of bicycle infrastructure for all jurisdictions is 468 miles. This represents an eight-fold growth in the County's bicycle infrastructure.

The challenge ahead involves developing a cohesive, integrated plan and identifying sources of funds to implement that plan. This is the goal of the San Bernardino County Non-Motorized Transportation Plan (NMTP). The NMTP of 2001 and the 2006 update have taken us part way there. This 2011 Plan hopes to take the development of such systems to another level. It identifies a comprehensive network, with a focus on the bicycle system. It is also a response, in part, to the initiatives to reduce vehicle travel and greenhouse gas emissions embedded in California Senate Bill 375 (SB 375). The Plan satisfies the State of California requirements of a Bicycle Transportation Plan (BTP) for purposes of Caltrans Bicycle Transportation Account (BTA) funding.

Implementation of the Plan will be a win-win on multiple fronts, and a strong partnership among local governments, transportation agencies, and the citizens of San Bernardino County can make it happen. The 2011 San Bernardino County NMTP will serve as a vehicle for communicating the non-motorized vision for the County, which is represented by the collective visions of each jurisdiction. Although the jurisdictions will be responsible for implementation of the Plan, it is important to have a Plan that cuts across subareas and jurisdictions so that coordination can occur on a physical facility level as well as in scheduling and funding.

ES.1.1 Overview of NMTP Development Process

The development of the 2011 NMTP was a collaborative effort between SANBAG and local jurisdictions in San Bernardino County, with policy oversight by the SANBAG Board of Directors. The existing 2006 update of the NMTP and the associated local jurisdiction plans provided the starting point, but the 2011 Plan represents a wholesale upgrade of the entire document, focusing principally on the bicycle system, but on the walking environment as well.

SANBAG staff conducted an initial inventory of all existing Class I, II and III bicycle facilities in the County and rode most of the facilities personally. This was supplemented by local jurisdiction inventory data. Existing facilities were then mapped, and proposed facilities from the

prior plan were superimposed. This served as the starting point for network development, representing an interactive process between SANBAG and local jurisdiction staff.

Basic criteria were applied to gauge the need and feasibility for additional bicycle facilities, including:

- Connections to major destination points and trip generators
- Connectivity within and across jurisdictional boundaries
- Potential for usage of exclusive rights-of-way (i.e. for Class I facilities)
- Physical characteristics of roadways and suitability for accommodation of bicycle facilities (i.e. for Class II and III facilities)
- Closing gaps between existing facilities
- Constructability and cost issues

Accident data were tabulated from the Statewide Integrated Traffic Records System (SWITRS), both by jurisdiction and for the County as a whole. A comprehensive countywide map of existing and proposed facilities was then prepared, and a draft subarea map was prepared for each jurisdiction. Each map was accompanied by tables of existing and proposed facilities, and a narrative was prepared describing both existing conditions and the bikeway plan for each. Construction costs were estimated for each improvement type and segment based on current unit cost factors (in 2010 dollars). The relevant sections were provided to each jurisdiction for review.

Typically two to three review cycles were undertaken before the city-level maps, tables, and text were finalized. These represented the “core” of the bicycle portion of the plan and were incorporated into Chapter 4. The Transportation Technical Advisory Committee (TTAC) served as a focal point for discussion of technical issues related to the NMTP. Periodic reviews of NMTP status were provided to the TTAC beginning in 2009.

The body of the report was completed and provided for local jurisdiction review in mid-February 2011. The report was reviewed by the TTAC and by individual jurisdictions, and comments were reflected in the text, as appropriate.

The SANBAG Plans and Programs Committee served as the committee with policy oversight throughout the process. The committee approved the proposed NMTP policies in October 2009 and received reports on the Plan in February and March, 2011. Following approval of the NMTP by the Committee on March 16 (action yet to come), the SANBAG Board approved the Plan on April 6 (action yet to come). Individual jurisdictions were responsible for approval of the Plan with their own city councils and the Board of Supervisors.

Public involvement opportunities have been available through the open meetings of the Plans and Programs Committee. Agendas have been posted and are available to all through the SANBAG website. However, direct outreach to the public and advocacy groups was limited during the course of the development of this Plan, due to the compressed timeline in which the Plan had to be prepared once the dates were set by the State for local jurisdiction applications for Bicycle Transportation Account funds. Nevertheless, one of the implementation actions listed in Chapter 7 is to take this significantly upgraded NMTP to both bicycle and pedestrian advocates and the general public. Comments and suggestions from these groups will be incorporated into the Plan, with another update of the NMTP anticipated by the end of 2012.

ES.1.2 NMTP Structure

The Non-motorized Transportation Plan is organized into the following chapters:

Executive Summary

1. Introduction
2. Regional System Overview and Goals, Objectives, and Policies
3. Bicycle Planning
4. Pedestrian Planning
5. Local Jurisdiction Bicycle Plans
6. Design Guidelines
7. Plan Implementation

Chapter 5 is the key chapter showing the NMTP for bikeways at the jurisdiction level. It includes an inventory of existing and proposed facilities, mileage statistics, accident data, and a narrative that ties each plan together. SANBAG acknowledges several Non-Motorized Transportation Plans prepared for other California jurisdictions from which information, graphics, and examples were drawn for inclusion in the San Bernardino County NMTP, specifically, bicycle plans for Stanislaus County, San Francisco Bay Area, and City of Portland. Additional information was extracted from the *Caltrans Design Manual, Chapter 1000 – Bikeway Planning and Design*, American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for the Development of Bicycle Facilities*, and the Federal Highway Administration's *Manual on Uniform Traffic Control Devices (MUTCD)*.

ES.2.0 Local Jurisdiction Plans

For purposes of the Non-Motorized Transportation Plan, the study uses the following study areas:

- East Valley
- West Valley
- Victor Valley
- Mountains
- Barstow Area
- Morongo Basin
- Needles Area

The subareas are generally consistent with the San Bernardino County Measure I subareas, with the exception of the San Bernardino Valley. The Valley Measure I Subarea was further disaggregated into the East Valley and West Valley to provide additional granularity when mapping the NMTP facilities. Each of these subareas has unique aspects and demographics relevant to establishing an effective NMTP. Chapter 2 further identifies and comments on the unique geographic and demographic elements for each subarea.

ES.2.1 Goals

The infrastructure improvements and programs recommended in San Bernardino County for the NMTP will be shaped by the Plan's goals and policies. Goals provide the context for the specific policies discussed in the NMTP. The goals provide the long-term vision and serve as the foundation of the Plan. Goals are broad statements of purpose, while policies identify specific initiatives and provide implementation direction on elements of the Plan.

The following represent the goals of the NMTP:

1. Increased bicycle and pedestrian access - Expand bicycle and pedestrian facilities and access within and between neighborhoods, to employment centers, shopping areas, schools, and recreational sites.
2. Increased travel by cycling and walking - Make the bicycle and walking an integral part of daily life in San Bernardino County, particularly (for bicycle) for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient.
3. Routine accommodation in transportation and land use planning - Routinely consider bicyclists and pedestrians in the planning and design of land development, roadway, transit, and other transportation facilities, as appropriate to the context of each facility and its surroundings.
4. Improved bicycle and pedestrian safety - Encourage local and statewide policies and practices that improve bicycle and pedestrian safety.

ES.2.2 Policies

A set of policy recommendations was approved the SANBAG Plans and Programs Committee in October 2009 and reconfirmed in February 2011. The policies are as follows:

1. Local jurisdictions are the agencies responsible for the identification of non-motorized transportation projects within their jurisdiction for inclusion into the Plan. SANBAG shall only serve in an advisory capacity with respect to the identification of projects on the regional network. SANBAG shall provide advice on the inclusion of projects that may serve to better establish connectivity between jurisdictions, intermodal facilities and regional activity centers. However, local jurisdictions have sole authority over all projects included in the Plan
2. Local jurisdictions are also responsible for implementation of the projects included in the NMTP. SANBAG may provide advisory support to jurisdictions in the project development process on request. Should SANBAG be requested to provide assistance delivering a project in the Plan, such instances should be limited to development of regional non-motorized transportation facilities that provide connectivity to more than one jurisdiction or complete gaps within the regional non-motorized transportation network or serve to provide better access to transit facilities.

3. SANBAG shall, when feasible, support local education and safety efforts currently being implemented through local law enforcement, highway patrol, Caltrans and schools to better educate children and adults on the safe use of bicycles and to promote the non-motorized transportation system.
4. SANBAG shall prepare and update the comprehensive map identifying the County's non-motorized transportation system using its in-house GIS capabilities. Maintenance of the maps is also an important element of SANBAG's proposed 511 Traveler Information System.
5. SANBAG shall work with its member agencies to develop a regional way-finding system to assist travelers to identify the non-motorized transportation system. Any such system developed shall be developed in collaboration with local jurisdictions, will afford an opportunity for member agency customization, and promote connectivity to transit facilities, park and ride lots, and other regional activity centers.
6. SANBAG shall work with and encourage member agencies to incorporate non-motorized transportation facilities into general and specific plans as well as provide assistance in identifying design standards that provide for pedestrian- and bicycle-friendly access to transit facilities.
7. SANBAG shall use the NMTP as one component of the overall strategy to reduce greenhouse gas emissions pursuant to SB 375.
8. SANBAG shall work with and encourage transit operators to provide end-of-trip pedestrian and bicycle-serving facilities, such as bike lockers, racks, and capacity on transit vehicles to carry bicycles and better facilitate the integration and use of non-motorized transportation within the regional transportation system.
9. SANBAG shall use this plan as the basis to allocate state, federal, and local funds for delivery of non-motorized transportation improvements. Fund types may include, but are not limited to, federal Transportation Enhancement (TE), Congestion Mitigation and Air Quality (CMAQ), state Bicycle Transportation Account (BTA), and Transportation Development Act (TDA) Article 3 funds.
10. SANBAG shall work with member agencies to coordinate delivery of the NMTP and projects contained in the Nexus Study.
11. SANBAG shall work with member agencies to identify state/federal bicycle and pedestrian infrastructure or planning grant opportunities. When funding opportunities arise, SANBAG shall work to support local jurisdiction grant applications or collaborate with local jurisdictions to directly submit grant applications for projects in the Plan.
12. SANBAG and member agencies shall conduct regular bicycle and pedestrian counts to monitor the effects of implementation of the NMTP. SANBAG shall work to identify funding for the monitoring of Class I, separated shared-use facilities, so that no financial impact is borne by the local jurisdictions for collection of count information. Counts conducted on Class II and Class III, on-street bicycle facilities, shall correspond with counting for intersections that are both on the non-motorized network and require CMP Monitoring as outlined in the Congestion Management Program. When counts for non-

CMP intersections are desired, SANBAG shall be responsible for identifying funding for such counts.

These policies constitute a modest expansion of SANBAG's role in implementing the NMTP. Most of the policy recommendations are incorporated into SANBAG's current activities, although they may not be explicitly stated. All of the proposed policies are consistent with the agency's role as a County Transportation Commission and a Council of Governments. Moreover, SANBAG programs significant state, federal and local funding sources to implement the components of the NMTP, and needs to play an active role in providing for regional non-motorized transportation from that perspective as well.

ES.3.0 Bicycle Planning

Chapter 3 provides an overview of bicycle planning as it relates to the San Bernardino County Non-Motorized Transportation Plan. The chapter begins by outlining the classes of bicycle facilities. For the purposes of the NMTP, there are three classes of bicycle facilities and are as follows:

- Class I (Share Use or Bike Path): A bikeway physically separated from any street or highway. Shared Use Paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.
- Class II (Bike Lane): A portion of roadway that has been designated by striping, signaling, and pavement markings for the preferential or exclusive use of bicyclists.
- Class III (Bike Route): A generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel regardless of whether such facilities are designated for the exclusive use of bicycles, or are to be shared with other transportation modes.

ES.3.1 Types of Riders

Despite the advances various cities have made in facilitating bicycling, many individuals still have concerns about the safety of bicycle transportation. Other bikeway plans have used a typology to categorize riders based on their approach to bicycling. A more thorough description of the four classes of bike riders identified by Alta Planning in collaboration with the City of Portland include:

- Strong and Fearless
- Enthused and Confident
- Interested but Concerned
- Not Interested

Of course there are limitations to any model that categorizes individuals; however, there is still some utility to considering these four generalizations, namely that it forces SANBAG to better think about who the plan is intended to serve. A major premise of this plan is that the residents who are described as 'interested but concerned' will not be attracted to bicycle for transportation by the provision of more bike lanes, but may be more willing to ride if a network of low-stress bikeways is provided.

ES.3.2 Existing Bicycle Network

ES.3.2.1 Overview

San Bernardino County has some excellent non-motorized facilities already in place for both recreation and commuting. The following describes these assets in detail and their relationship to the NMTP.

The growth of the non-motorized system has been substantial during the past decade. In 2001, the combined total of centerline miles of bicycle infrastructure for all jurisdictions was 53 miles. As of 2011, the combined total of centerline miles of bicycle infrastructure for all jurisdictions is 468 miles. This represents an increase of 415 centerline miles and a 780% growth in the County's bicycle infrastructure.

Subarea maps of existing and proposed bicycle facilities are provided in Figures ES.1 through ES.7. The full set of maps may be referenced at the end of the Executive Summary. Additional information and tabular summaries of existing and proposed route mileage are provided for each individual jurisdiction in Chapter 5.

ES.3.2.2 Existing Regional Non-Motorized Assets

San Bernardino County has some excellent non-motorized facilities already in place for both recreation and commuting. Chapter 3 more thoroughly describes the assets, but the NMTP recognizes the following as assets within the context of the Plan.

- Pacific Electric Trail
- Santa Ana River Trail
- Flood Control Channels
- Power Line Corridors
- Cajon Pass Connector – Route 66 Heritage Trail
- Orange Blossom Trail

ES.3.3 Future Bicycle Network

In addition to the above-mentioned existing regional assets that span across cities, many jurisdictions have developed their own Class I, Class II, and/or Class III bikeways. Collectively, these represent the bikeways portion of the NMTP. Figures ES.1 through ES.7 showcase these future facilities at the subarea level. Table ES.1 summarizes the total centerline mileage of existing and planned bicycle network by class. These mileage totals represent a summation of those in the individual jurisdiction plans. Because some of the planned facilities represent conversions from one class to another, the total existing plus planned is a slight over-counting of the actual mileage expected when the plan is complete.

Table ES.1. Summary of Existing and Planned Bicycle Network Centerline Mileage

(Note: Total existing plus planned represents a slight over-representation of the future network totals – see text.)

	Class I	Class II	Class III	Total
Existing	78.1	270.1	116.3	464.5
Planned	277.9	756.6	247.6	1282.1
Total	356.0	1026.7	363.9	1746.6

The local jurisdiction plans in Chapter 5 are drawn from the subarea maps and provide a more detailed discussion on specific bikeway facilities, end-of-trip facilities, and project priorities, where appropriate. Chapter 6 addresses design considerations when implementing bicycle facilities. Chapter 7 presents an overall implementation strategy and priorities.

ES.3.4 Recommendations for the Regional Bikeway System

Specific project lists, recommendations, and priorities are contained in the individual jurisdiction bicycle plans in Chapter 5. This section provides recommendations that are regional in nature, with emphasis on the physical infrastructure in San Bernardino County. Chapter 7 presents an implementation strategy that takes these a step further, and provides regional priorities.

1. Deliver the Class I, II and III identified in the subarea maps referenced in Chapter 3. Although the Class I facilities can be considered a backbone bicycle system, there is much more to the network than just Class I facilities. Other types of facilities can also be delivered more quickly and less expensively, improving regional connectivity.
2. Develop better bicycle connectivity between cities and subareas of the County by coordinating the location and staging of network improvements. This must include improved collaboration with Caltrans, given the number of State highways connecting the subareas. Connectivity on Class II and Class III bicycle facilities can be increased by prioritizing the “low-hanging fruit” – parts of the regional system that are low-cost, close gaps in the system, and provide connections to key destinations.
3. Develop a better “sense of a system” through improved signage, markings, and way-finding for both cyclists and pedestrians.
4. Develop an improved inventory of end-of-trip facilities, particularly at transit stations, schools, other public buildings, and major employment centers.
5. Proactively coordinate integration of cycling and walking accommodations with the State’s Complete Streets requirements, once guidelines are finalized by the State.
6. Proactively coordinate integration of cycling and walking access accommodations to and from transit stations.
7. Continue safety education and promotion of cycling through schools, newsletters, and public websites.

ES.4.0 Pedestrian Planning

It is often perceived that pedestrian transportation is essentially a local concern, given the length of most pedestrian trips and the manner in which these trips are usually contained within a given area, whether that area is a schoolyard, a shopping center, a college campus or a downtown business district. At the same time, federal legislation and funding programs remind us that regional, state and federal levels of government all have a stake in designing the multi-modal transportation system to serve the needs of all travelers. It is often said that pedestrian planning is a part of “alternative transportation planning,” yet there is no more basic mode of transportation than getting around on foot. Indeed, no trip involving a car, bus, train, airplane or other mode can even begin without a pedestrian journey taking place. Regional transportation facilities such as airports and transit stations must be designed around the needs of the pedestrian if they are to fulfill their mission.

For purposes of this plan, the following activities are considered regional priorities for pedestrian planning and project development:

1. Improving pedestrian access to transit;
2. Removing existing barriers to pedestrian travel;
3. Development of regional trails and pathways which provide improved pedestrian access to destinations;
4. Improvement of the pedestrian environment on major regional arterials and at regional activity centers.

Chapter 4 describes potential elements of a regionally based pedestrian transportation effort. The core focus of pedestrian planning, as it relate to this plan, include the following:

- Improving transit access
- Preventing and eliminating barriers to pedestrian travel
- Developing regional trails and pathways
- Better providing for pedestrian travel on major regional arterials and at activity centers

ES.5.0 Overview of Local Jurisdiction Plans

Chapter 5 represents the heart of the Non-Motorized Plan for bicycle facilities. The chapter contains individualized plans for each of the 25 jurisdictions in San Bernardino County, with emphasis on the bicycle system. The plans all contain the same structure, including the following elements:

- The population of the jurisdiction
- An overview of the jurisdiction, including uniquely tailored commentary about its geography or historical elements.
- A summary of the jurisdiction’s existing and proposed land use.
- A map of the jurisdiction’s General Plan land use coverage, including information on schools, parks, residential, commercial and industrial land uses.

- A map of the jurisdiction's existing and proposed bicycle facility networks.
- A textual description of the existing non-motorized condition.
- A textual description of the jurisdiction's past investment in non-motorized infrastructure
- A textual description of the jurisdiction's non-motorized priorities, if any.
- Tables that document existing, future and priority bicycle facility projects with class, mileage, and estimated costs.
- A summary table of multi-modal connections.
- Documentation of municipal code pertaining to the provision of non-motorized serving infrastructure, if available.
- A summary of non-motorized serving infrastructure, including bike racks, bike lockers and shower facilities where identified.
- A table with collision information and an analysis as to how the number of collisions relates to the state average.
- Information on jurisdiction safety and education programs related to non-motorized transportation.

ES.6.0 Design Guidelines

Chapter 6 provides details on the recommended design and operating standards for the San Bernardino County Bikeway System.

The Caltrans Design Manual, Chapter 1000 – Bikeway Planning and Design establishes the standards for bicycle facility design within the state of California. These standards are, for the most part, consistent with the American Association of State Highway and Transportation Officials (AASHTO) Guidelines for the Development of Bicycle Facilities. The Caltrans standards provide the primary basis for the design recommendations that follow.

ES.7.0 Implementation

Chapter 7 provides an implementation strategy for the NMTP and a description of funding opportunities for the proposed bicycle and pedestrian improvements. The implementation strategy consists of the following elements:

- Identification of implementation priorities (both infrastructure and institutional)
- Coordination of responsibilities for project delivery
- Identification and pursuit of funding opportunities

Each of these elements is described below.

ES.7.1 Implementation Priorities

The setting of priorities for the NMTP involves more than just the identification of priority projects, although it does include that. Priorities must also consider institutional initiatives that pave the way for the delivery of priority projects. Thus, the priorities for the NMTP include a

restatement of some of the recommendations for system improvement identified in Chapter 3, plus several institutional initiatives to foster program and project delivery. The following represent NMTP priorities (not in order of importance):

1. Deliver the Class I backbone bicycle system. Although the Class I facilities can be considered a backbone bicycle system, there is much more to the network than just Class I facilities. Other types of facilities can also be delivered more quickly and less expensively, improving regional connectivity.
2. Develop better bicycle connectivity between cities and subareas of the County. This must include improved collaboration with Caltrans, given the number of State highways connecting the subareas.
3. Increase connectivity on Class II and Class III bicycle facilities by prioritizing the “low-hanging fruit” – parts of the regional system that are low-cost, close gaps in the system, and provide connections to key destinations.
4. Develop a better “sense of a system” through improved signage, markings, and way-finding for both cyclists and pedestrians
5. Proactively coordinate integration of cycling and walking accommodations with the State’s Complete Streets requirements
6. Proactively coordinate integration of cycling and walking access accommodations to and from transit stations
7. Aggressively pursue grant funding and devote additional programmatic funding to non-motorized facilities
8. Identify individuals within SANBAG, local jurisdictions, Caltrans, and transit agencies to be points of contact on non-motorized facility implementation and ensure communication on non-motorized topics among the agencies.

The full identification of Class I bicycle facilities is contained in the subarea maps in Chapter 3 and in the individual jurisdiction plans in Chapter 5. Several key Class I projects listed in the 2001 NMTP and the 2006 update that would be considered as part of the Class I backbone system include:

- Santa Ana River Trail
- Pacific Electric Trail
- Orange Blossom Trail
- San Timoteo Canyon Trail
- Riverwalk Trail
- Cajon Pass Connector – Route 66 Heritage Trail

ES.7.2 Coordination of Responsibilities for Project Delivery

The policies listed in Chapter 2 provide guidance as to how implementation is to occur. Local jurisdictions are responsible for the identification, prioritization, and implementation of non-motorized transportation projects within their jurisdiction, with SANBAG serving in an advisory capacity and coordinating activity where necessary. SANBAG is also to work with local jurisdictions to develop a regional way-finding system.

The policies also identify a role for SANBAG to pursue grant opportunities for State/federal bicycle and pedestrian infrastructure or planning. SANBAG will support local jurisdiction grant applications or collaborate with local jurisdictions to directly submit grant applications for

projects in the Plan. The pursuit of grant application opportunities is one of the areas identified in the Plan where substantial improvement is possible, as San Bernardino County has been under-represented in the share of non-motorized grant funds that have been awarded in the past.

This Plan recognizes that regional cooperation among local agencies is critical in the selection and promotion of priority projects and the allocation of local funding to ensure an orderly implementation of an effective bicycle system.

The schedule for implementation on a year-to-year basis can be better coordinated and should be determined by:

- Relationship to the regional system
- Readiness of each project in terms of local support;
- CEQA approvals;
- Right-of-way requirements;
- Timing with other related improvements; and/or
- Success in obtaining competitive funding.

SANBAG staff should monitor the short- and mid-term projects identified in this Plan and subsequent updates, and maintain a comprehensive list of projects and funding allocations. A rolling five-year schedule of short-term projects should be identified so that resources can be focused and coordinated to ensure attention to priority projects over time. This is not to the exclusion of other local projects, but regional connectivity to support commuting and other longer-distance trips is an emphasis of this Plan. Each year the TTAC and SANBAG staff will review the list of projects slated for priority that year, review the readiness of each project to be proposed for funding, and consider the sequencing of the projects. This process does not preclude cities and local agencies from continuing to submit other local projects for funding consideration.

ES.7.3 Funding Opportunities

There are a variety of potential funding sources - including local, state, regional, and federal programs - that can be used to construct the proposed bicycle and pedestrian improvements. Most of the federal, state, and regional programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. In addition, the majority of the programs require a local match, usually 10-15% of the total project cost.

The recipients of grant funds for many of these programs are then required to monitor the projects for compliance with the program guidelines. Although the pursuit and administration of grant moneys can require a significant amount of staff time, grant funding allows for the construction of more miles of facilities.

The key to receiving funds will be to tailor grant requests to meet specific requirements and criteria, leverage grants with matching funds, and demonstrate a commitment by the jurisdiction to implement and maintain the system. Serious intent would include adoption of the NMTP, development of an additional local plan, inclusion of bikeway improvements into the Capital

Improvements Plan, adoption of recognized design and operating standards, and public/political support.

A detailed breakdown of available funding programs is provided in Chapter 7. Tracking program specifics can be difficult as program guidelines are modified regularly. Thus it is important to verify program dates and deadlines with the program administrator since specific amounts and deadlines can change from year to year. In general, however, the known broad groups of funding sources are broken into three broad categories—federal, state and local—with further documentation of the known fund sources pertinent to each of the broad groups called out as bullet points. For more detailed information on any of the funding sources, see the more detailed discussion in Chapter 7.

Figure ES.1 Bicycle Facilities
East Valley

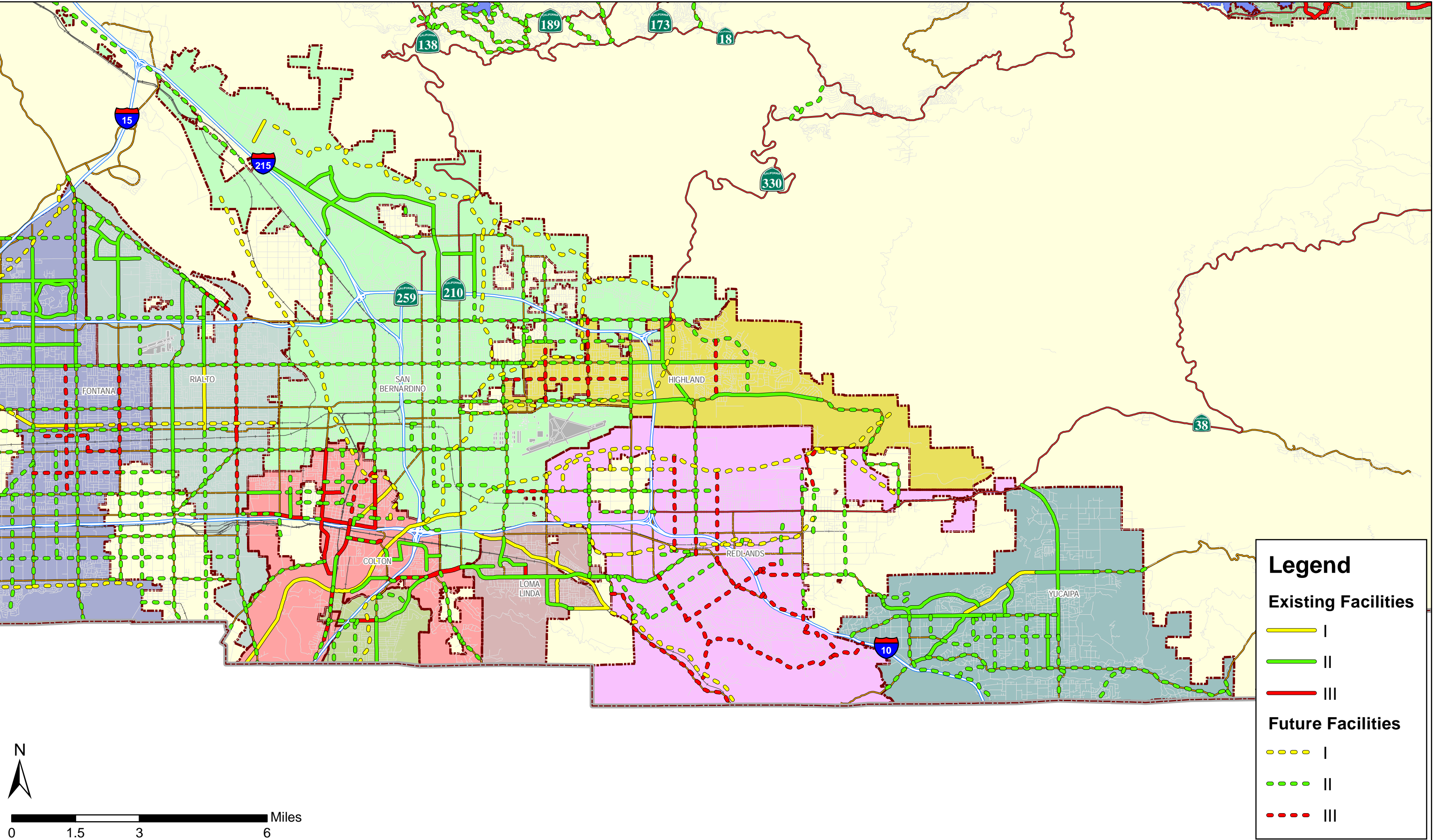


Figure ES.2 Bicycle Facilities
West Valley

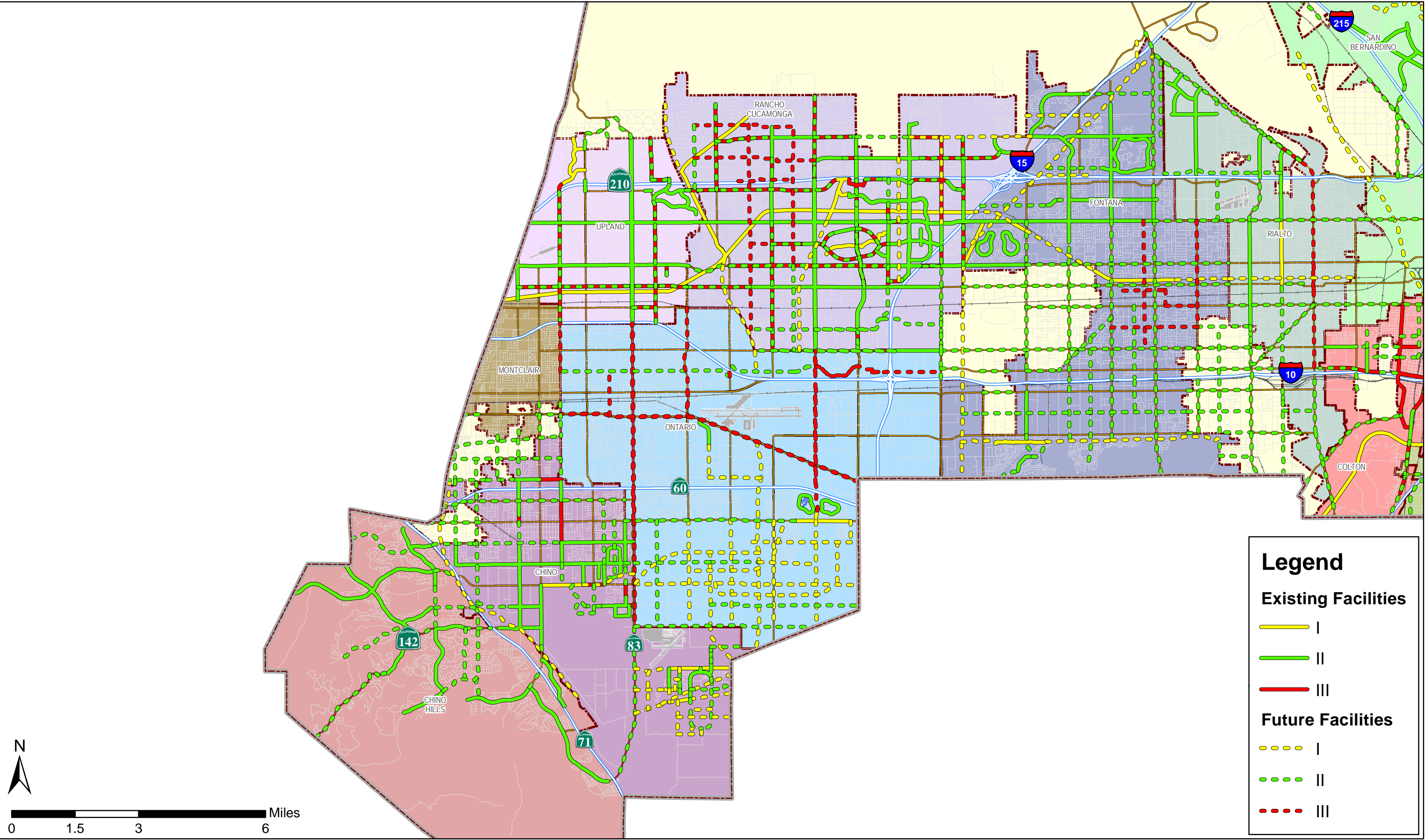


Figure ES.3 Bicycle Facilities
Victor Valley

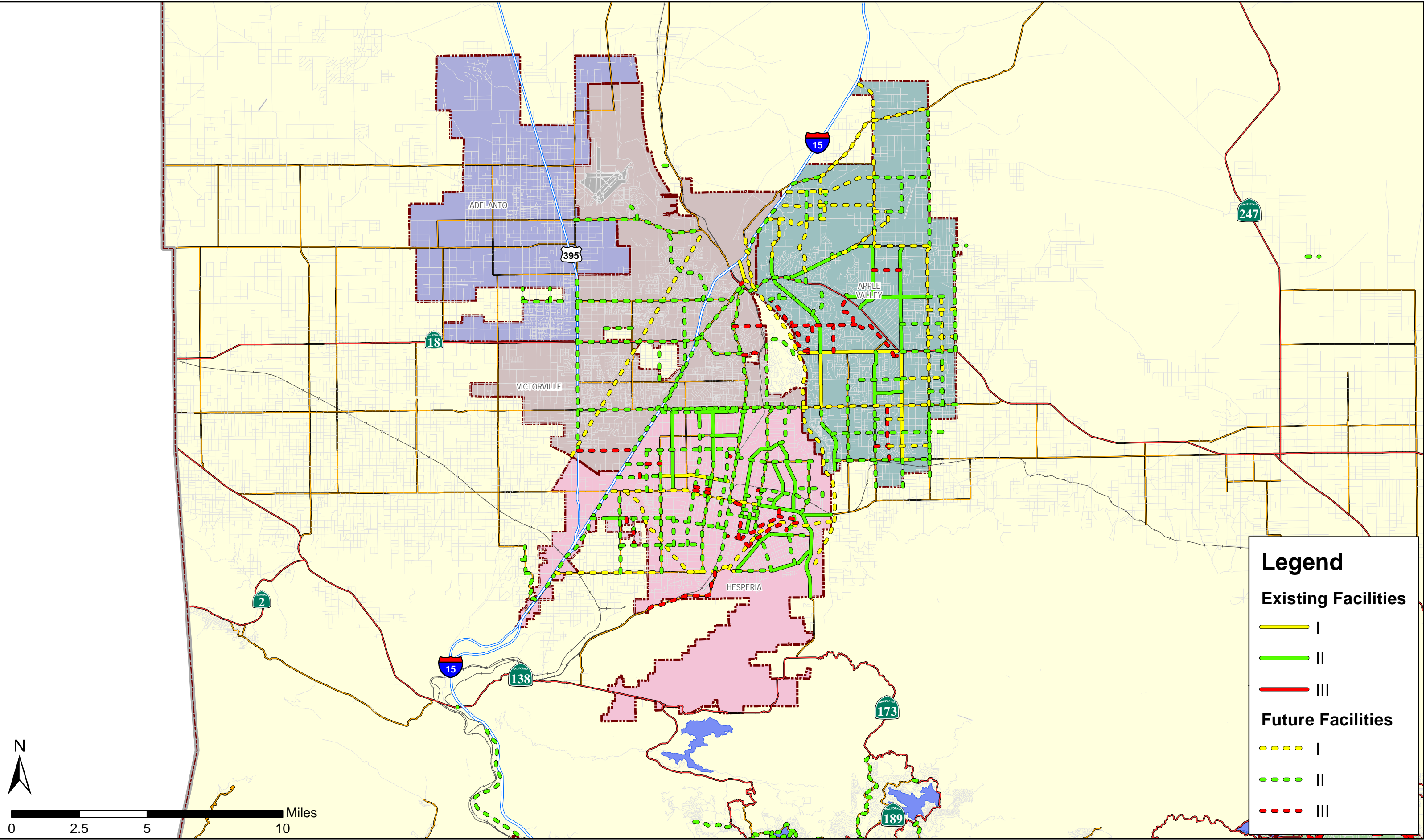


Figure ES.4 Bicycle Facilities
Barstow Area

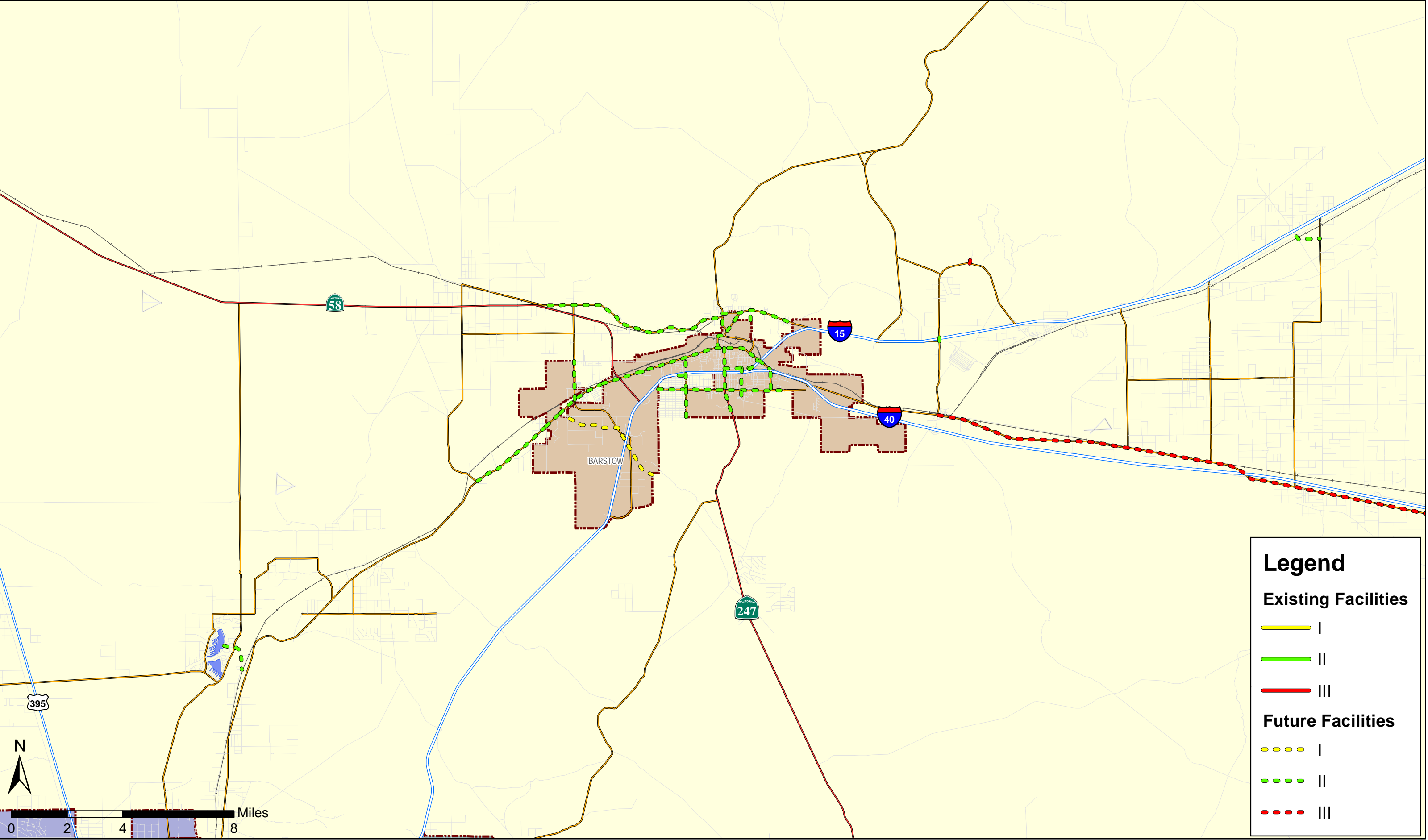


Figure ES.5 Bicycle Facilities
Morongo Basin

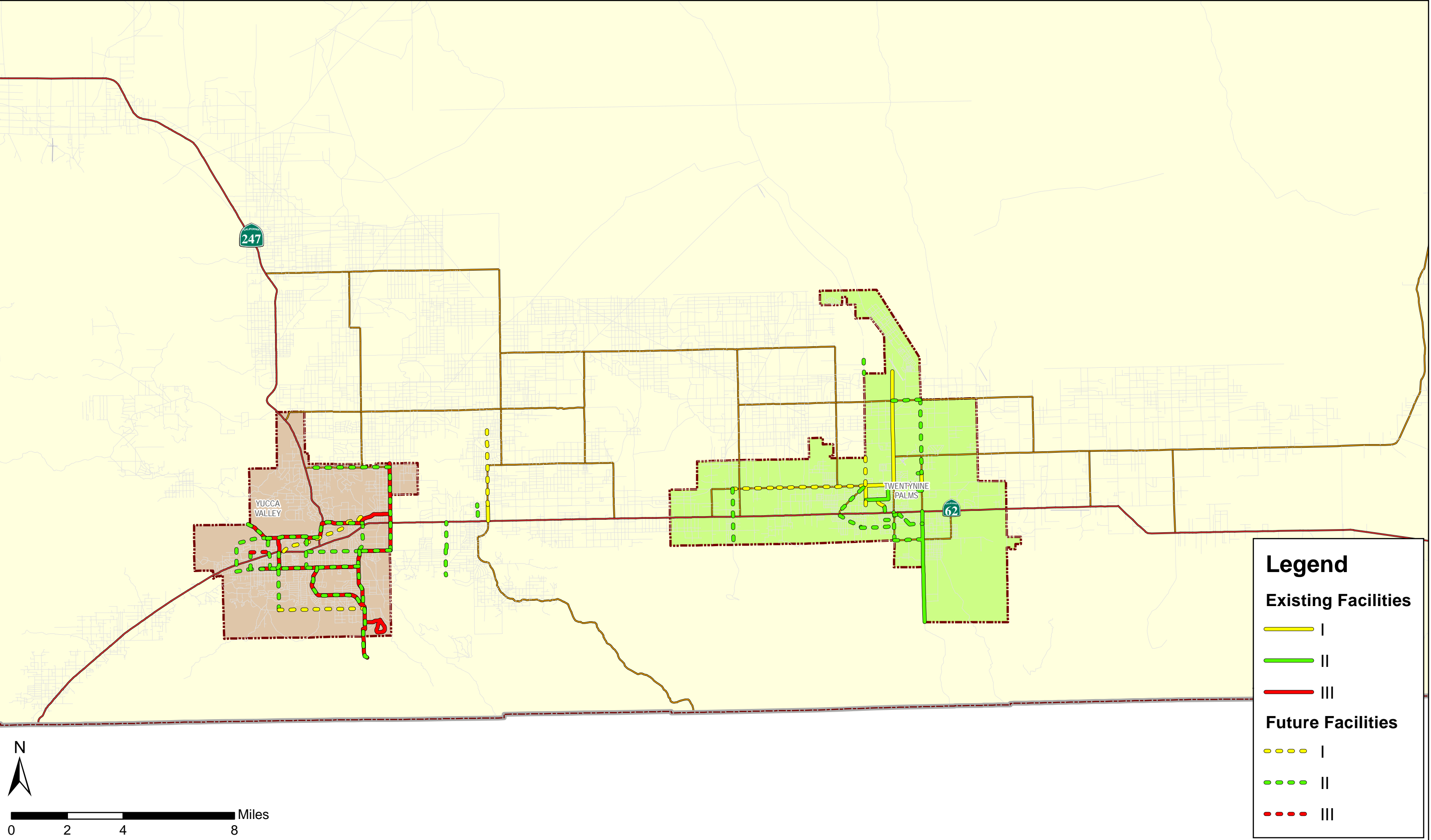


Figure ES.6 Bicycle Facilities
Mountain Areas

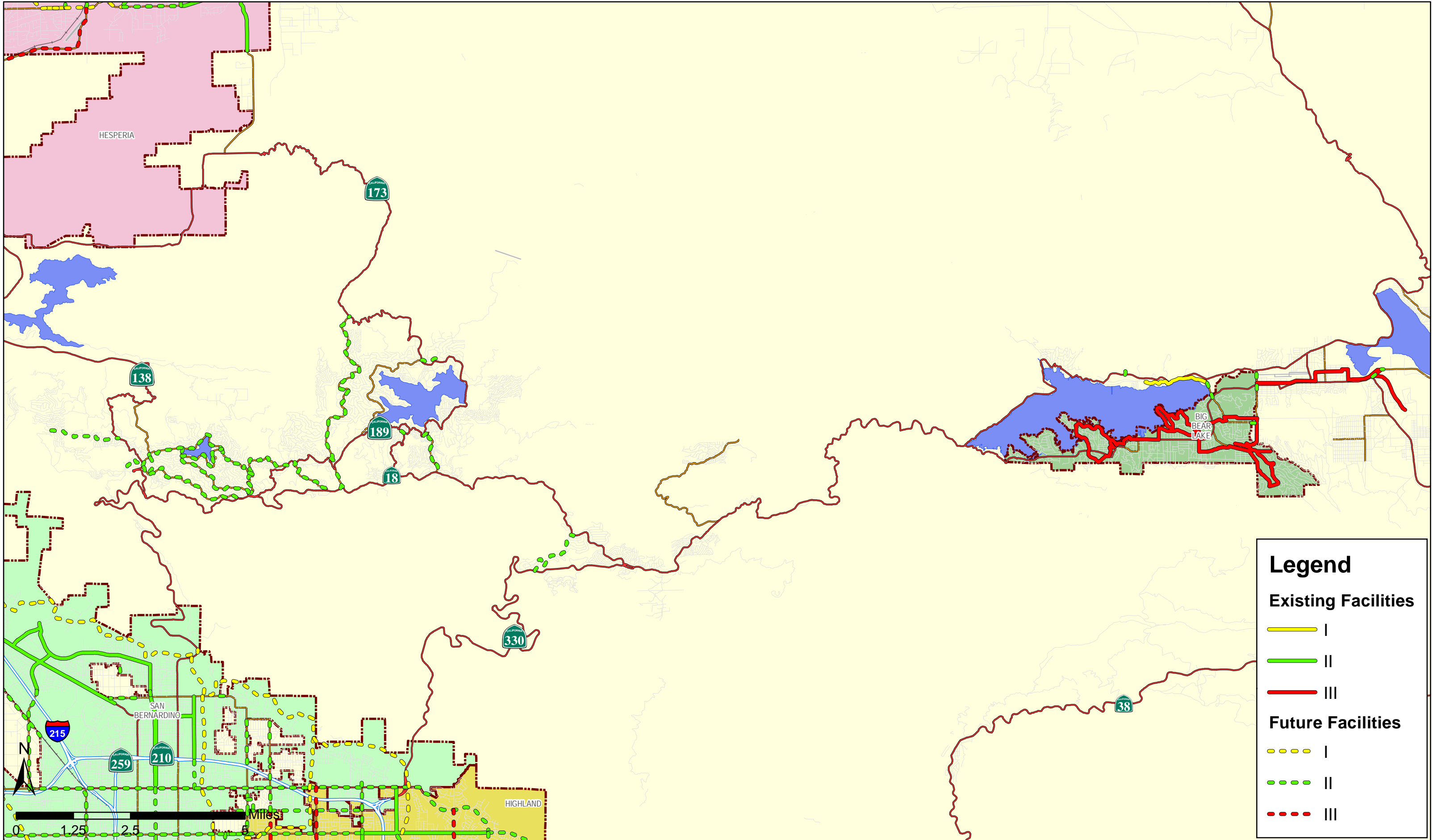
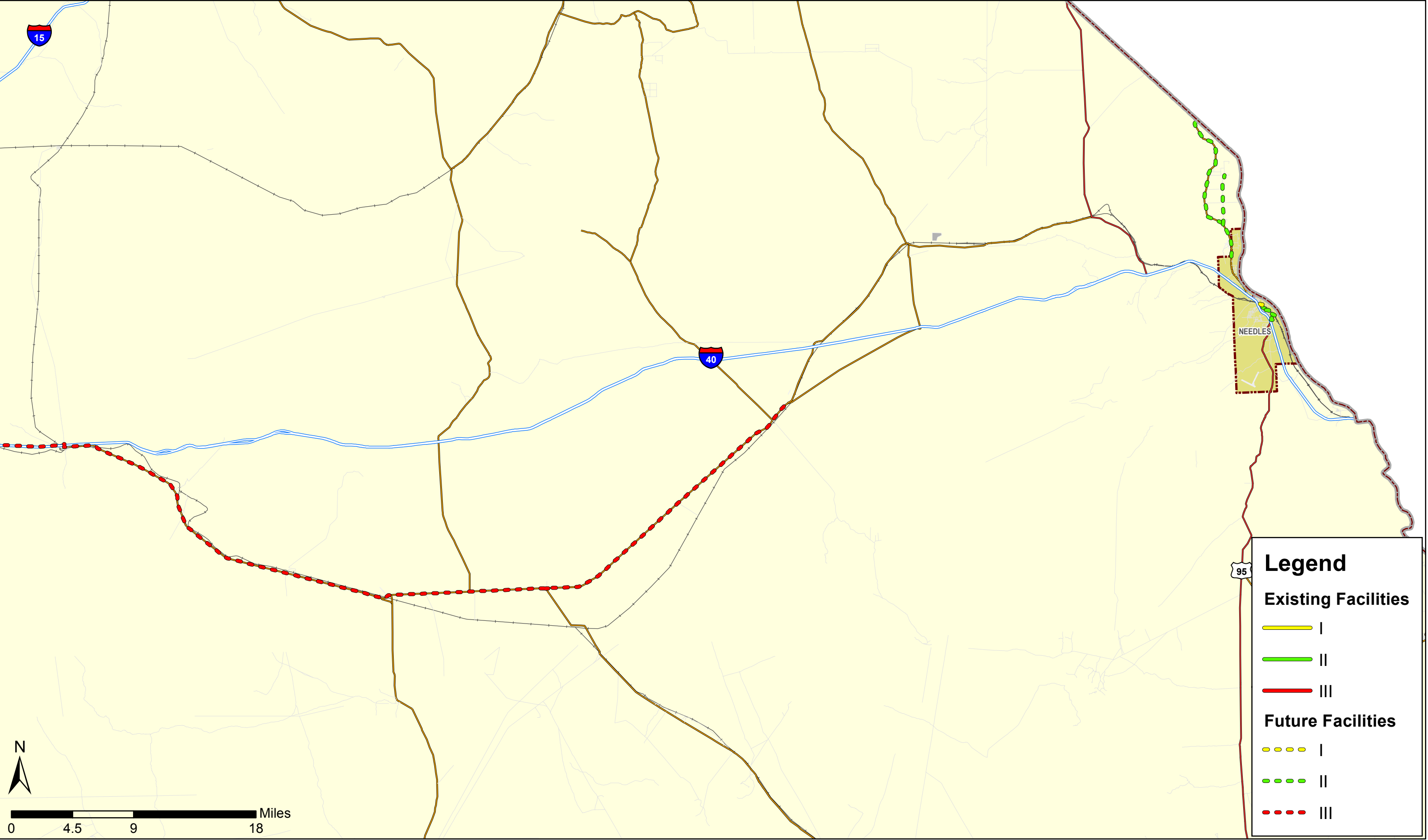


Figure ES.7 Bicycle Facilities
Needles Area



1.0 Introduction

1.1 Purpose and Need for the Non-Motorized Transportation Plan

A safe, interconnected cycling and walking system can be a major asset to both individual communities and to an urban area, particularly one as well suited to these activities as San Bernardino County. The climate and topography are highly conducive for these and other outdoor pursuits. Both natural and man-made corridors provide ideal opportunities for development of a comprehensive system of cycling facilities, pathways, and trails. Even though San Bernardino County is known for its recreational opportunities, such a system is not well developed in many areas of the County.

However, progress is being made. In 2001, the combined total of centerline miles of bicycle infrastructure for all jurisdictions was 53 miles. As of 2011, the combined total of centerline miles of bicycle infrastructure for all jurisdictions is 468 miles. This represents an eight-fold growth in the County's bicycle infrastructure.

It is not difficult to convince the public that the provision of bicycle and walking facilities makes sense as a community investment. One of the themes emerging from the public meetings to develop a County vision is that residents place high value on cycling and walking features within their communities. Cycling and walking trails have been listed in the County's "Countywide Vision Project" meetings as a part of our infrastructure needing improvement and are also commonly highlighted as a selling point in advertising for new communities.

These facilities, and the activities enabled by them, are good for our health, good for our economy, good for our environment, and good for our quality of life. The facilities can also be implemented without great expense. There is every reason to believe that San Bernardino County can and should be one of the centers of cycling and pedestrian activity in Southern California.

The challenge ahead involves developing a cohesive, integrated plan and identifying sources of funds to implement that plan. This is the goal of the San Bernardino County Non-Motorized Transportation Plan (NMTP). The NMTP of 2001 and the 2006 update have taken us part way there. This 2011 Plan hopes to take the development of such systems to another level. It identifies a comprehensive network, with a focus on the bicycle system. It is also a response, in part, to the initiatives to reduce vehicle travel and greenhouse gas emissions embedded in California Senate Bill 375 (SB 375).

Implementation of the Plan will be a win-win on multiple fronts, and a strong partnership among local governments, transportation agencies, and the citizens of San Bernardino County can make it happen. The 2011 San Bernardino County NMTP will serve as a vehicle for communicating the non-motorized vision for the County, which is represented by the collective visions of each jurisdiction. Although the jurisdictions will be responsible for implementation of the Plan, it is important to have a Plan that cuts across subareas and jurisdictions so that coordination can occur on a physical facility level as well as in scheduling and funding.

The remainder of Chapter 1 describes the context of San Bernardino County, the process of NMTP development, and the relationship to other plans.

1.2 The San Bernardino County Setting

San Bernardino County, located in the northeastern portion of Southern California, boasts a wide variety of urban and rural settings. Framed by Los Angeles County on the west, Riverside County to the south, and extending to Nevada and Arizona to the east, the County serves as a major gateway into and out of the Southland. Interstate 10, State Route 60, and State Route 210 provide substantial east-west mobility in the Valley Region. Interstates 15 and 215 and SR-71 provide north-south freeway connectivity. I-15 connects Riverside and San Diego Counties to the south, and continues over the Cajon pass to the cities of the high desert and northward to Las Vegas. See map of the County and its subareas in Figure 1-1.

State Routes 18 and 330 and Scenic State Highway 38 provide connections to the mountains surrounding the Valley, providing linkages for tourists and residents from the Valley to Lake Arrowhead, Big Bear Lake and other mountain communities. State Routes 18, 62, 138, and 247 provide additional connectivity in the Victor Valley, Morongo Basin and surrounding communities.

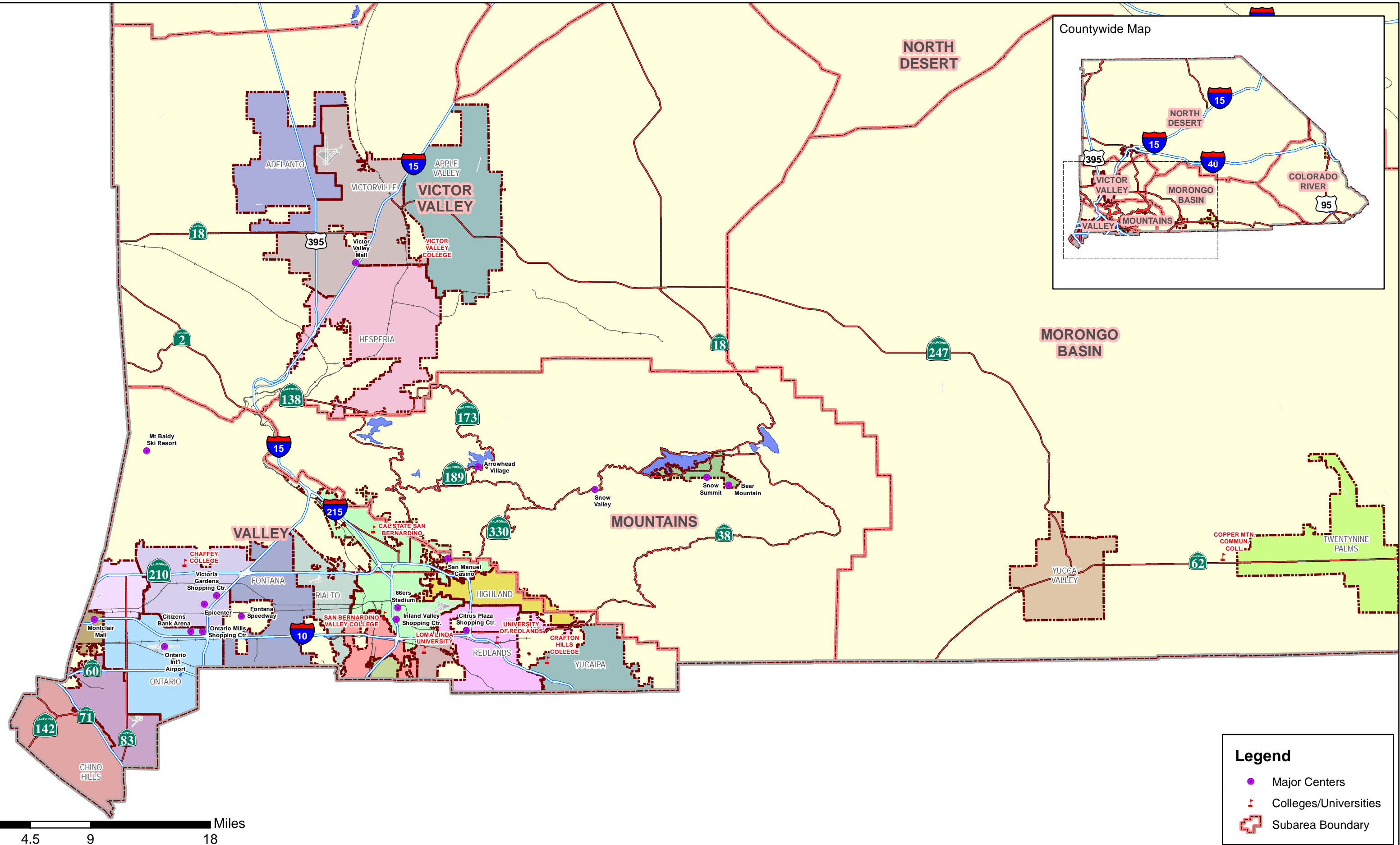
The County is connected to other regional centers by scheduled transit and commuter rail service provided by Metrolink. The San Bernardino Metrolink line is the most heavily traveled commuter rail line in Southern California, providing 36 trains per day to and from San Bernardino, Los Angeles and intervening cities. Metrolink service also is provided from San Bernardino to Riverside and Orange Counties, with 8 trains per day. Omnitrans provides local and express bus service within the County and into adjacent communities. Five other transit operators provide transportation for work and non-work trips. The SANBAG Long Range Transit Plan provides a vision for rail and transit service in the Valley Region of San Bernardino County and is a framework around which some of the bicycle and pedestrian facilities can be planned.

LA/Ontario International Airport (ONT) is located in the west valley and is the third busiest passenger airport in Southern California after Los Angeles International Airport (LAX) and John Wayne Airport in Orange County. It is also the second busiest hub for freight movement and is adjacent to one of the principal focal points of logistics and distribution in California.

San Bernardino County is known for its world-class transportation and distribution centers, owing much to its historic role as a crossroads of rail transportation and now also serving the same function for truck transportation. The area is also known for its historic agricultural heritage in citrus and vineyard operations, although today, the residential and commercial growth has severely curtailed agriculture in the Valley.

The environment for cycling and walking in San Bernardino County is ideal. The climate is temperate, with a range in average high temperatures for the Valley of 67 to 96 degrees, in the Victor Valley from 60 to 98 degrees, and in the Morongo Basin from 64 to 108 degrees. The average high temperatures in Big Bear Lake range from 47 to 81 degrees. Rainfall is moderate and concentrated in the November through March timeframe, while humidity is generally low. The topography outside of the mountain areas is typically flat to moderately sloping.

Figure 1.1 San Bernardino County Subarea Map



Despite the suitability of the climate and topography, relatively little commuter-related cycling occurs. Statistics from the American Community Survey (2006-2009) indicate the percentage of trips to work by bicycling and walking. The bike-to-work percentage varies by jurisdiction, but is only about 0.4% countywide. The walk-to-work percentage is higher, but still only about 1.5%, and this statistic was heavily influenced by very high walk-to-work percentages at the Twentynine Palms Marine Base.

Table 1.1 shows that the percent of trips to work by bicycle are low throughout Southern California, and presumably throughout the rest of the United States. The counties are not greatly different from one another in terms of the percentage of bike/walk trips to work.

Table 1.1 Percent of Trips to Work by Bicycle and Walking for Southern California Counties (Source: American Community Survey 2006-2009)

COUNTY	Total Trips to Work	No. of Bike Trips	No. of Walk Trips	% Bike Trips	% Walk Trips
Imperial	43,205	195	685	0.45%	1.59%
Los Angeles	3,858,750	20,975	54,630	0.54%	1.42%
Orange	1,313,985	9,500	13,220	0.72%	1.01%
Riverside	590,515	2,825	5,810	0.48%	0.98%
San Bernardino	658,710	2,475	10,070	0.38%	1.53%
Ventura	345,660	2,165	3,930	0.63%	1.14%
TOTAL	6,810,825	38,135	88,345	0.56%	1.30%

Streets and Highways Code Section 891.2 requires an estimate of the number of existing bicycle commuters in San Bernardino County and an estimate of the number of bicycle commuters that may be present upon implementation of the NMTP. Given that the number of workers in San Bernardino County is approximately 870,000, one can estimate that there are currently 3300 commuting cyclists daily in the County. A reasonable goal for increased bicycle mode share is to achieve the region-wide average (0.56%) over the life of the plan. This increased mode share taken together with an increase in workers would result in approximately 5500 commuting cyclists within the next 20 years.

Anecdotal evidence indicates that substantial recreational cycling occurs in San Bernardino County in areas where facilities are available. If San Bernardino County is generally representative of the nation, the following national statistics help to characterize the cycling and walking habits of the population (Source: National Survey of Bicyclist and Pedestrian Attitudes and Behavior, National Highway Traffic Safety Administration, August 2008.). The survey was of persons age 16 and older.

National Bicycling Statistics

- 27% of the population age 16 and older rode a bicycle at least once in the last 30 days; translated to San Bernardino County, this would mean approximately 300,000 persons 16 and older road their bike in the last month.
- 19% indicate that they ride at least once per week in the summer months; 57% indicate that they never ride a bike

- 29% of bicycle trips are for recreational purposes, 24% are for exercise/health, 14% are for personal errands, and only 5% are for commuting to work or school
- Access to bicycles - Slightly less than half (46%) of those 16 and older have regular access to a bicycle, with access increasing with increases in household income.
- About 43 percent ride a bicycle at least once in the summer months.
- Bicycling declines with age, with those under 20 most likely to bicycle and doing so more frequently, while the majority over 45 did not bicycle during the summer months.
- About half of all trips (48%) were made on paved roads. An additional 13 percent were on shoulders of paved roads, and 5 percent on bike lanes on roads. One in 7 was made on sidewalks (14%) and 13% were made on bike trails/paths.
- Half of bicyclists nationally say bike paths are available in the area they ride, while 32 percent say bike lanes are available.
- Over half of those who do not use available bicycle paths or lanes say they don't use them because they are not convenient, available, or go where they need to go.
- More than one in 10 bicyclists (13%) felt threatened for their personal safety on the most recent day they rode their bicycle, 88 percent of these feeling threatened by motorists.
- About 4 percent of bicyclists, or 2.04 million nationally, were injured while riding in the past two years. About 25% of these were hit by a motorist.
- Nearly half (48%) of those 16 and older are satisfied with how their local community is designed for making bicycle riding safer.
- Almost half (48%) of those 16 and older would like to see improvements to bicycle facilities, including more bike lanes (38%) and bike paths (30%).

National Walking Statistics

- About 86 percent of people 16 or older walked, jogged or ran outdoors for 5 minutes or more during the summer months, with 78 percent doing so within the past 30 days.
- Walking in the past 30 days decreases to 66 percent for those over 64.
- Personal errands (38%), exercise (28%) and recreation (21%) are the most common reasons for walking trips.
- Nearly half (45%) of the walking trips were mostly made on sidewalks, and 25 percent were mostly on paved roads. Just 6 percent were made mostly on bike or walk paths or trails.
- About 6 percent of pedestrians felt their personal safety threatened on their most recent trip, with 62 percent saying they felt threatened by motorists.

- Almost three-quarters of people 16 and older (73%) are satisfied with how their local community is designed for walking, though one-third would like to see changes including more sidewalks (42%) and more street lights (17%).

The physical infrastructure for cycling and walking varies widely from one city to another and within cities as well. Some of the newer communities such as Rancho Cucamonga have worked closely with developers to create walkable residential areas with an abundance of trails, bicycle facilities and other amenities. Some older communities such as Redlands have had the historical benefit of sidewalks, grid streets, and streets wide enough for bicycles and autos to co-exist. Each city or unincorporated area has its strengths and weaknesses with respect to the suitability of infrastructure for walking and cycling.

One of the purposes of the NMTP is to re-think the role of some of the streets in our communities – who uses them, how they function, and how they are designed. It is while the infrastructure of the new century is being designed and constructed that the needs of all transportation users must be taken into account. Quality is an easier goal to achieve when designed from the beginning – and prohibitively expensive to add after the fact. California’s “Complete Streets” legislation (AB 1358) pushes local governments to think multi-modally when constructing roadway infrastructure, and not consider autos and trucks exclusively.

1.3 Overview of the NMTP Development Process

The development of the 2011 NMTP was a collaborative effort between SANBAG and local jurisdictions in San Bernardino County, with policy oversight by the SANBAG Board of Directors. The existing 2006 update of the NMTP and the associated local jurisdiction plans provided the starting point, but the 2011 Plan represents a wholesale upgrade of the entire document, focusing principally on the bicycle system, but on the walking environment as well.

SANBAG staff conducted an initial inventory of all existing Class I, II and III bicycle facilities in the County and rode most of the facilities personally. This was supplemented by local jurisdiction inventory data. Existing facilities were then mapped, and proposed facilities from the prior plan were superimposed. This served as the starting point for network development, representing an interactive process between SANBAG and local jurisdiction staff.

Basic criteria were applied to gauge the need and feasibility for additional bicycle facilities, including:

- Connections to major destination points and trip generators
- Connectivity within and across jurisdictional boundaries
- Potential for usage of exclusive rights-of-way (i.e. for Class I facilities)
- Physical characteristics of roadways and suitability for accommodation of bicycle facilities (i.e. for Class II and III facilities)
- Closing gaps between existing facilities
- Constructability and cost issues

Accident data were tabulated from the Statewide Integrated Traffic Records System (SWITRS), both by jurisdiction and for the County as a whole. A comprehensive countywide map of existing and proposed facilities was then prepared, and a draft subarea map was prepared for each jurisdiction. Each map was accompanied by tables of existing and proposed facilities, and

a narrative was prepared describing both existing conditions and the bikeway plan for each. Construction costs were estimated for each improvement type and segment based on current unit cost factors (in 2010 dollars). The relevant sections were provided to each jurisdiction for review.

Typically two to three review cycles were undertaken before the city-level maps, tables, and text were finalized. These represented the “core” of the bicycle portion of the plan and were incorporated into Chapter 4. The Transportation Technical Advisory Committee (TTAC) served as a focal point for discussion of technical issues related to the NMTP. Periodic reviews of NMTP status were provided to the TTAC beginning in 2009.

The body of the report was completed and provided for local jurisdiction review in mid-February 2011. The report was reviewed by the TTAC and by individual jurisdictions, and comments were reflected in the text, as appropriate.

The SANBAG Plans and Programs Committee served as the committee with policy oversight throughout the process. The committee approved the proposed NMTP policies in October 2009 and received reports on the Plan in February and March, 2011. Following approval of the NMTP by the Committee on March 16 (action yet to come), the SANBAG Board approved the Plan on April 6 (action yet to come). Individual jurisdictions were responsible for approval of the Plan with their own city councils and the Board of Supervisors.

Public involvement opportunities have been available through the open meetings of the Plans and Programs Committee. Agendas have been posted and are available to all through the SANBAG website. However, direct outreach to the public and advocacy groups was limited during the course of the development of this Plan, due to the compressed timeline in which the Plan had to be prepared once the dates were set by the State for local jurisdiction applications for Bicycle Transportation Account funds. Nevertheless, one of the implementation actions listed in Chapter 7 is to take this significantly upgraded NMTP to both bicycle and pedestrian advocates and the general public. Comments and suggestions from these groups will be incorporated into the Plan, with another update of the NMTP anticipated by the end of 2012.

1.4 Relationship to Other Planning Efforts

The San Bernardino County Non-Motorized Transportation Plan is intended to coordinate and guide the provision of all bicycle related plans, programs and projects within the County. As a countywide plan, it focuses on providing bikeway connections between the incorporated cities, adjacent counties and major regional destinations within the County. The Plan also identifies local jurisdiction priorities, where applicable, and serves as a guide regarding bikeway policies and design standards.

Southern California Association of Governments’ Regional Transportation Plan (RTP)

The SCAG 2008 RTP contains a non-motorized section and is supported by a separate report for non-motorized transportation. The policies/desired outcomes expressed in this report include the following:

- Decrease bicyclist and pedestrian fatalities and injuries
- Increase accommodation and planning for bicyclists and pedestrians

- Increase bicycle and pedestrian use in the SCAG region as an alternative to vehicle trips
- Encourage development of local non-motorized plans
- Produce a comprehensive regional non-motorized plan
- Improve funding for non-motorized transportation

The San Bernardino County NMTP is consistent with these statements. In fact, the NMTP represents the implementation of several of these desired outcomes.

The RTP also contains mapping of non-motorized facilities that incorporates mapping prepared by subregions such as SANBAG. As such, the RTP is a coordinating document in particular for routes, pathways, and trails that cross county boundaries.

A major focus of the 2012 RTP is the development of a Sustainable Communities Strategy (SCS). This includes the focusing of land use activity within existing and future transit station areas and the planning for transportation strategies that enhance non-auto mobility, reduce energy consumption, and reduce greenhouse gases. Non-motorized transportation modes will play a prominent role in the SCS.

SANBAG Long Range Transit Plan (LRTP)

The Long Range Transit Plan addresses the County's travel challenges and provides a system of transit facilities and services that can increase transit's role in the future. Given the large and diverse nature of the county, the plan is split geographically into three areas: San Bernardino Valley; Victor Valley; and rural areas. In the San Bernardino Valley, the LRTP includes major projects such the Redlands Rail system between San Bernardino and downtown Redlands, extension of the Gold Line to Montclair, with additional planning to LA/Ontario International Airport, and extensive Bus Rapid Transit network. The first segment of the BRT system between Cal State San Bernardino and Loma Linda is scheduled to be in operational service by 2015. There are many transit stations around which non-motorized facilities should be planned. Figure 1.2 shows the existing and future LRTP network in the Valley and approximate station locations around which land use and pedestrian/bicycle connectivity can be planned.

Improvement to Transit Access for Cyclists and Pedestrians

SANBAG has received a grant from Caltrans under the Statewide or Urban Transit Planning Studies program for an effort entitled "Improvement to Transit Access for Cyclists and Pedestrians." The project seeks to identify a range of physical infrastructure improvements, such as more or better bicycle parking, better way-finding signage and better connections to nearby pedestrian paths, trails and bike lanes to encourage more people to walk or bike to Metrolink and planned E Street sbX stations. Such infrastructure improvements would provide Metrolink and sbX users with additional modal alternatives to and from the transit system, thereby decreasing automobile traffic within station catchment areas and reducing the need for automobile parking at station locations. Moreover, providing improved infrastructure within transit catchment areas will promote increased safety for pedestrians and cyclists. This planning effort should be completed near the end of Fiscal Year 2011-2012.

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Caltrans Bicycle Transportation Account

Although not a plan, the Bicycle Transportation Account (BTA) is an important program that annually provides State funds for city and county projects that improve safety and convenience for bicycle commuters. To be eligible for BTA funds, a city or county must prepare and adopt a Bicycle Transportation Plan (BTP) that complies with Streets and Highways Code Section 891.2. The BTP must be approved by the local agency's Regional Transportation Planning Agency.

Caltrans anticipates an appropriation of \$7.2 million annually for projects that improve safety and convenience for bicycle commuters. Streets and Highways Code (S&HC) Section 2106 stipulates the annual BTA funding level, subject to appropriation in the approved State budget. Per S&HC 891.4(b), funds are allocated to cities and counties on a matching basis that requires the applicant to furnish a minimum of 10 percent of the total project cost. No applicant shall receive more than 25 percent of the total amount transferred to the BTA in a single fiscal year. Additional information on funding sources for cycling and walking facilities is provided in Chapter 7.

1.5 Structure of the NMTP

The Non-motorized Transportation Plan is organized into the following chapters:

Executive Summary

1. Introduction
2. Regional System Overview and Goals, Objectives, and Policies
3. Bicycle Planning
4. Pedestrian Planning
5. Local Jurisdiction Bicycle Plans
6. Design Guidelines
7. Plan Implementation

Chapter 5 is the key chapter showing the NMTP for bikeways at the jurisdiction level. It includes an inventory of existing and proposed facilities, mileage statistics, accident data, and a narrative that ties each plan together. SANBAG acknowledges several Non-Motorized Transportation Plans prepared for other California jurisdictions from which information, graphics, and examples were drawn for inclusion in the San Bernardino County NMTP, specifically, bicycle plans for Stanislaus County, San Francisco Bay Area, and City of Portland. Additional information was extracted from the *Caltrans Design Manual, Chapter 1000 – Bikeway Planning and Design*, American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for the Development of Bicycle Facilities*, and the Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (MUTCD).

To be eligible for Bicycle Transportation Account (BTA) funds, a city or county must prepare and adopt a Bicycle Transportation Plan that addresses items a. - k. in Streets and Highways Code

Section 891.2. Caltrans has prepared a checklist of requirements under this code section, and the NMTP references the pages of the Plan that address those requirements. These are listed in Table 1-2.

Table 1.2. Requirements of Streets and Highways Code Section 891.2 and References to Pages in the Plan that Address these Requirements

Requirement	Pages
a) The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.	See pages 1-4, 3-3 and 3-4.
b) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.	See Figures 2-1 through 2-7 in Chapter 2.
c) A map and description of existing and proposed bikeways.	See Figures 3-4 through 3-7 in Chapter 3.
d) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	See Figures 2-1 through 2-7 for locations of significant bicycle trip destinations. Most of these locations include bicycle racks. See Chapter 5 local plans for more specific info on end-of-trip facilities.
e) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	See page 3-6, map of transit system on page 1-8, and selected references in local plans in Chapter 5.
f) A map and description of existing and proposed facilities for changing and storing clothes	See page 3-6.
g) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.	Bicycle safety and education programs vary by jurisdiction. Please see local bicycle plans in Chapter 5.
h) A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.	See description of status of public involvement on page 1-7. Updates on NMTP progress have been provided at multiple meetings of the SANBAG Plans and Programs Committee, open to the public.
i) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.	See description of plans with which the NMTP has been coordinated on pages 1-7 through 1-9.

j) A description of the projects proposed in the plan and a listing of their priorities for implementation.	Projects and priorities are listed in individual local plans in Chapter 5. Implementation priorities are listed in Chapter 7.
k) A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.	Each local plan in Chapter 5 contains an estimate of prior expenditures and cost estimates for future facilities.

2.0 System Overview and Policies

This chapter provides an overview of the subareas within San Bernardino County as well as a set of overarching policies to guide the Plan and its implementation. The focus of the Plan is on a primary (rather than local) network of bikeway corridors for intercity and regional travel.

2.1 Study Area Characteristics

The study area of the Non-Motorized Transportation Plan includes the entire County and connections among communities. Because of its geographic size and diversity, San Bernardino County is divided into seven subareas for purposes of NMTP mapping:

- East Valley
- West Valley
- Victor Valley
- Mountains
- Barstow Area
- Morongo Basin
- Needles Area

Each of these subareas has unique aspects and demographics relevant to establishing an effective NMTP. Maps presented in this section show the road network, school locations, parks, park-and-ride lots, existing transit stations, and significant destinations (e.g. major shopping centers, airports, hospitals, etc.). Similar maps are provided in Chapter 3 with an overlay of existing and future bicycle facilities.

2.1.1 San Bernardino Valley (East Valley and West Valley)

The San Bernardino Valley contains the most populous cities in the County and a rich selection of neighborhoods and destinations. Freeways and commuter rail connect it to other parts of Southern California and the adjacent counties of Los Angeles, Orange, and Riverside. There are 15 cities in the Valley: Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa. Figures 2-1 and 2-2 provide separate maps showing the East Valley and West Valley. (Note: all maps are provided at the end of this chapter in the order referenced).

Numerous centers of shopping and retail attractions are scattered throughout this part of the County. Shopping malls such as Ontario Mills, Citrus Plaza, and Montclair Plaza serve as regional attractors, while the mixed-use Victoria Gardens embodies a new urbanist flavor in Rancho Cucamonga. Several other retail centers in almost every city provide big-box shopping convenience, and most cities have a small downtown area with a focus on local retail.

California State University San Bernardino and the University of Redlands, located close to the foothills, draw students from the state and beyond, while Chaffey College, San Bernardino Valley College, and Crafton Hills College, serve more local populations. In the western Valley,

the cities of Montclair and Upland border Los Angeles County and thus are close to University of La Verne and the Claremont Colleges.

Numerous institutions of healthcare are situated in the Valley, such as Loma Linda University Hospital, Arrowhead Regional Medical Center in Colton, Kaiser in Fontana and Ontario, Redlands Community Hospital, St. Bernadine's in San Bernardino, and San Antonio in Upland. These serve as major employment centers as well.

The Valley has an established transportation infrastructure that is complementary to the goals of the NMTP. For commuters, Metrolink provides regular train service to Downtown Los Angeles each weekday with some weekend service as well. The San Bernardino Line has stops in Montclair, Upland, Rancho Cucamonga, Fontana, Rialto, and San Bernardino. The Riverside Line primarily serves Riverside County, but also stops in Ontario. The Inland Empire-Orange County Line takes workers into Orange County via San Bernardino and cities in Riverside County. Most Metrolink stations serve as transit centers, providing benefits to commuters such as park-and-ride lots and transfers to local bus routes. The station at Montclair has ample parking and affords access to several Foothill Transit and OmniTrans bus lines. A planned transit center in Downtown San Bernardino will link the future Redlands light rail line with Metrolink and a new north-south bus rapid transit (BRT) line.

OmniTrans is the local transit operator for the San Bernardino Valley, providing bus service throughout the jurisdictions and also into parts of Los Angeles and Riverside counties. The Long Range Transit Plan delineates an extensive future bus rapid transit system in the Valley. The E Street sbX line will run from California State University – San Bernardino south into downtown San Bernardino, and Loma Linda, with termination near the University of Redlands. Other routes throughout the Valley are being considered as well. Foothill Transit is the operator of bus service in the eastern portion of Los Angeles County (primarily the San Gabriel Valley) with some lines going into San Bernardino County.

While LA/Ontario International Airport is the primary airport for the Inland Empire, San Bernardino International Airport (SBD) is expected to provide passenger service at some point in the future. Currently SBD serves major freight airlines as well as firefighting duties for the United State Forest Service. Cable Airport, Chino Airport, and Redlands Municipal Airport are general aviation airports also located in the San Bernardino Valley.

2.1.2 Victor Valley and Barstow

Victor Valley and the Barstow area are located north of the San Bernardino Valley and connected to it by I-15 through the Cajon Pass,. Although less urban than the cities to the south, the jurisdictions of the Victor Valley have seen much development since the turn of the century. The Victor Valley subarea contains the cities of Adelanto, Hesperia, Victorville, and the Town of Apple Valley. Figures 2-3 and 2-4 provide mapping for the Victor Valley and Barstow areas, respectively.

Although not as developed as the San Bernardino Valley, the Victor Valley has a number of locations for shopping such as the Victorville Mall, Village Center, and the Victor Plaza Shopping Center. Barstow has a cluster of outlet shopping centers designed principally for the passing traveler on I-15, along with more local use stores in its downtown. The Marine Corps Logistics Base and Burlington Northern/Santa Fe railroad facilities are major employment locations. Victor Valley College and Barstow Community College are major educational

institutions located in Victorville and Barstow, respectively. Public transportation in the Victor Valley is provided by the Victor Valley Transit Authority, while Barstow Area Transit serves Barstow and its surrounding areas.

The Southern California Logistics Airport (SCLA) in Victorville is primarily used for the transport of overseas goods in and out of the Southern California region. This important center for logistics is also used for military troop transport and firefighting planes for the California Department of Forestry. There are also several general aviation airports in this subarea: Apple Valley Airport, Baker Airport, Barstow-Dagget Airport, and Hesperia Airport.

2.1.3 Morongo Basin

Nestled near Joshua Tree National Park is the Morongo Basin. Surrounded by the vast expanse of the Mojave Desert, the Morongo Basin subarea is ideal for bicycling, both for recreation and commuting. The Town of Yucca Valley and the City of Twentynine Palms are located within the subarea, along with the unincorporated areas of Joshua Tree and Morongo Valley. Figure 2-5 provides mapping for the Morongo Basin.

Communities in the Morongo Basin are lower density in terms of residential and commercial activities. Most of the commercial activity is focused along State Route 62. SR-247 provides connectivity to the north. The local marine base, Marine Corps Air Ground Combat Center in Twentynine Palms, provides yearlong training to new recruits and thus is a strong and stable part of the local economy.

Jurisdictions in the Morongo Basin are served by public transportation through the Morongo Basin Transit Authority. There are several general aviation airports in the Morongo Basin, including: Twentynine Palms Airport, Yucca Valley Airport, and Roy Williams Airport.

2.1.4 Mountains

The Mountains subarea is located north and east of the San Bernardino Valley. It offers much in terms of recreational activities with its easy access to skiing resorts and Big Bear Lake. The only incorporated jurisdiction is that of the City of Big Bear Lake, though there are many unincorporated areas nearby, such as Big Bear City and Lake Arrowhead. Figure 2-6 provides mapping for the Mountain subarea.

The Mountains subarea is an active recreational area, particularly for winter sports. Communities in the Bear Valley subarea are centered on providing services and retail accommodations to visitors. Additionally, its location in the San Bernardino National Forest provides dozens of hiking and off-road trails. The backbone highway network consists largely of State highways, requiring Caltrans to play an active role in any accommodations considered for non-motorized facilities.

The Mountain Area Regional Transit Authority provides bus service to residents and visitors in the areas around Big Bear Lake, including service down the mountain to the East Valley. Big Bear City Airport is a general aviation airport just outside the city limits of the City of Big Bear Lake.

2.1.5 Colorado River Basin

Located along the Colorado River, this subarea contains the City of Needles and abuts Arizona to the east. Although it has limited population, the Colorado River Basin provides ample opportunities for recreation and outdoor activities. The area is also home to a satellite campus of Palo Verde Community College in Needles. Figure 2-7 provides mapping for the Colorado River Basin subarea.

Needles Area Transit provides public transportation to Needles and surrounding communities. The Chemehuevi Valley Airport is a general aviation airport located approximately eighteen miles south of Needles.

2.2 Goals

The infrastructure improvements and programs recommended in the San Bernardino County for the NMTP will be shaped by the Plan's goals and policies. Goals provide the context for the specific policies discussed in the NMTP. The goals provide the long-term vision and serve as the foundation of the Plan. Goals are broad statements of purpose, while policies identify specific initiatives and provide implementation direction on elements of the Plan.

The following represent the goals of the NMTP:

1. Increased bicycle and pedestrian access - Expand bicycle and pedestrian facilities and access within and between neighborhoods, to employment centers, shopping areas, schools, and recreational sites.
2. Increased travel by cycling and walking - Make the bicycle and walking an integral part of daily life in San Bernardino County, particularly (for bicycle) for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient.
3. Routine accommodation in transportation and land use planning - Routinely consider bicyclists and pedestrians in the planning and design of land development, roadway, transit, and other transportation facilities, as appropriate to the context of each facility and its surroundings.
4. Improved bicycle and pedestrian safety - Encourage local and statewide policies and practices that improve bicycle and pedestrian safety.

2.3 Policies

A set of policy recommendations was approved the SANBAG Plans and Programs Committee in October 2009 and reconfirmed in February 2011. The policies are as follows:

1. Local jurisdictions are the agencies responsible for the identification of non-motorized transportation projects within their jurisdiction for inclusion into the Plan. SANBAG shall only serve in an advisory capacity with respect to the identification of projects on the

regional network. SANBAG shall provide advice on the inclusion of projects that may serve to better establish connectivity between jurisdictions, intermodal facilities and regional activity centers. However, local jurisdictions have sole authority over all projects included in the Plan

2. Local jurisdictions are also responsible for implementation of the projects included in the NMTP. SANBAG may provide advisory support to jurisdictions in the project development process on request. Should SANBAG be requested to provide assistance delivering a project in the Plan, such instances should be limited to development of regional non-motorized transportation facilities that provide connectivity to more than one jurisdiction or complete gaps within the regional non-motorized transportation network or serve to provide better access to transit facilities.
3. SANBAG shall, when feasible, support local education and safety efforts currently being implemented through local law enforcement, highway patrol, Caltrans and schools to better educate children and adults on the safe use of bicycles and to promote the non-motorized transportation system.
4. SANBAG shall prepare and update the comprehensive map identifying the County's non-motorized transportation system using its in-house GIS capabilities. Maintenance of the maps is also an important element of SANBAG's proposed 511 Traveler Information System.
5. SANBAG shall work with its member agencies to develop a regional way-finding system to assist travelers to identify the non-motorized transportation system. Any such system developed shall be developed in collaboration with local jurisdictions, will afford an opportunity for member agency customization, and promote connectivity to transit facilities, park and ride lots, and other regional activity centers.
6. SANBAG shall work with and encourage member agencies to incorporate non-motorized transportation facilities into general and specific plans as well as provide assistance in identifying design standards that provide for pedestrian- and bicycle-friendly access to transit facilities.
7. SANBAG shall use the NMTP as one component of the overall strategy to reduce greenhouse gas emissions pursuant to SB 375.
8. SANBAG shall work with and encourage transit operators to provide end-of-trip pedestrian and bicycle-serving facilities, such as bike lockers, racks, and capacity on transit vehicles to carry bicycles and better facilitate the integration and use of non-motorized transportation within the regional transportation system.
9. SANBAG shall use this plan as the basis to allocate state, federal, and local funds for delivery of non-motorized transportation improvements. Fund types may include, but are not limited to, federal Transportation Enhancement (TE), Congestion Mitigation and Air Quality (CMAQ), state Bicycle Transportation Account (BTA), and Transportation Development Act (TDA) Article 3 funds.
10. SANBAG shall work with member agencies to coordinate delivery of the NMTP and projects contained in the Nexus Study.

11. SANBAG shall work with member agencies to identify state/federal bicycle and pedestrian infrastructure or planning grant opportunities. When funding opportunities arise, SANBAG shall work to support local jurisdiction grant applications or collaborate with local jurisdictions to directly submit grant applications for projects in the Plan.
12. SANBAG and member agencies shall conduct regular bicycle and pedestrian counts to monitor the effects of implementation of the NMTP. SANBAG shall work to identify funding for the monitoring of Class I, separated shared-use facilities, so that no financial impact is borne by the local jurisdictions for collection of count information. Counts conducted on Class II and Class III, on-street bicycle facilities, shall correspond with counting for intersections that are both on the non-motorized network and require CMP Monitoring as outlined in the Congestion Management Program. When counts for non-CMP intersections are desired, SANBAG shall be responsible for identifying funding for such counts.

These policies constitute a modest expansion of SANBAG's role in implementing the NMTP. Most of the policy recommendations are incorporated into SANBAG's current activities, although they may not be explicitly stated. All of the proposed policies are consistent with the agency's role as a County Transportation Commission and a Council of Governments. Moreover, SANBAG programs significant state, federal and local funding sources to implement the components of the NMTP, and needs to play an active role in providing for regional non-motorized transportation from that perspective as well.

**Figure 2.1 Overview Map
San Bernardino East Valley**

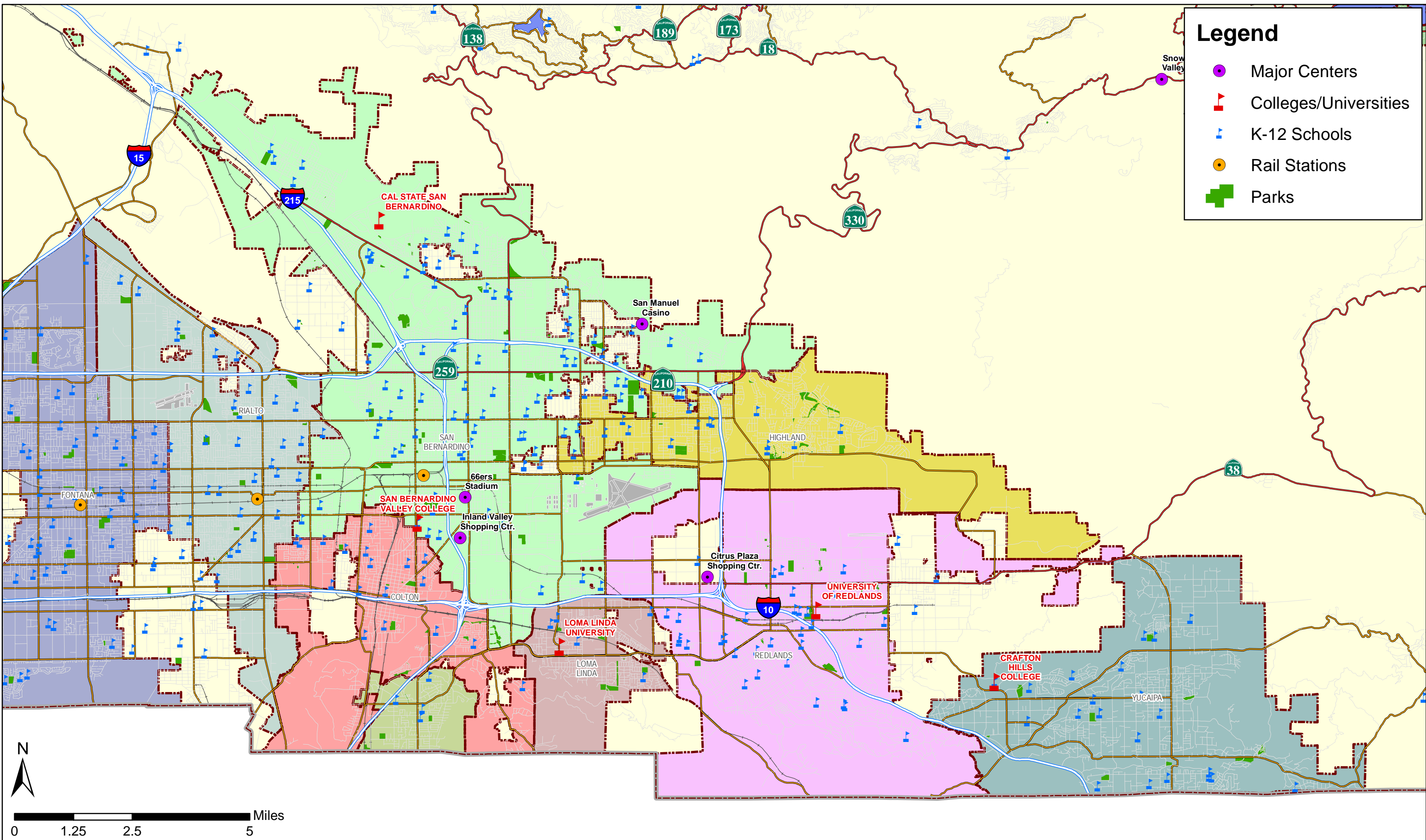


Figure 2.2 Overview Map
San Bernardino West Valley

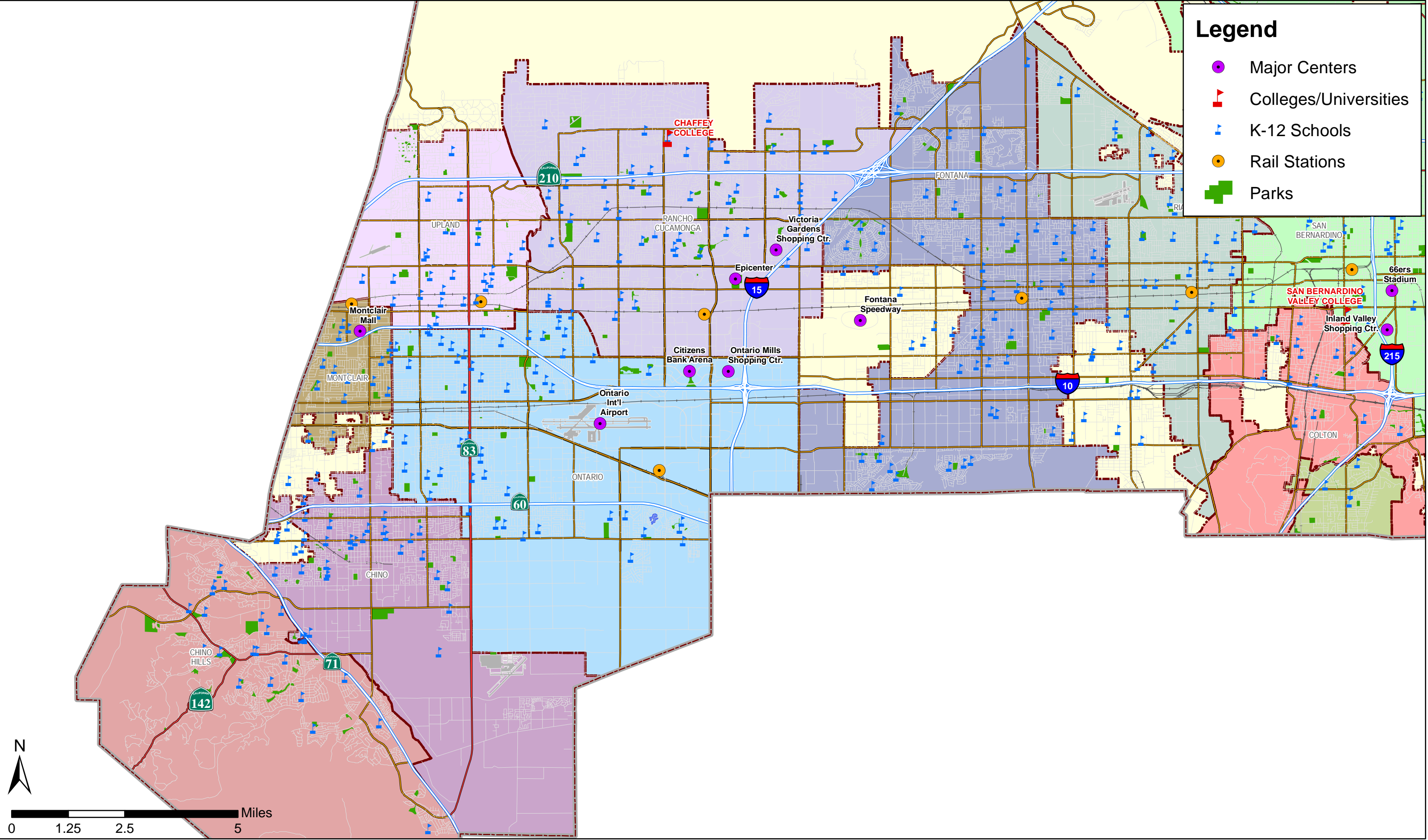
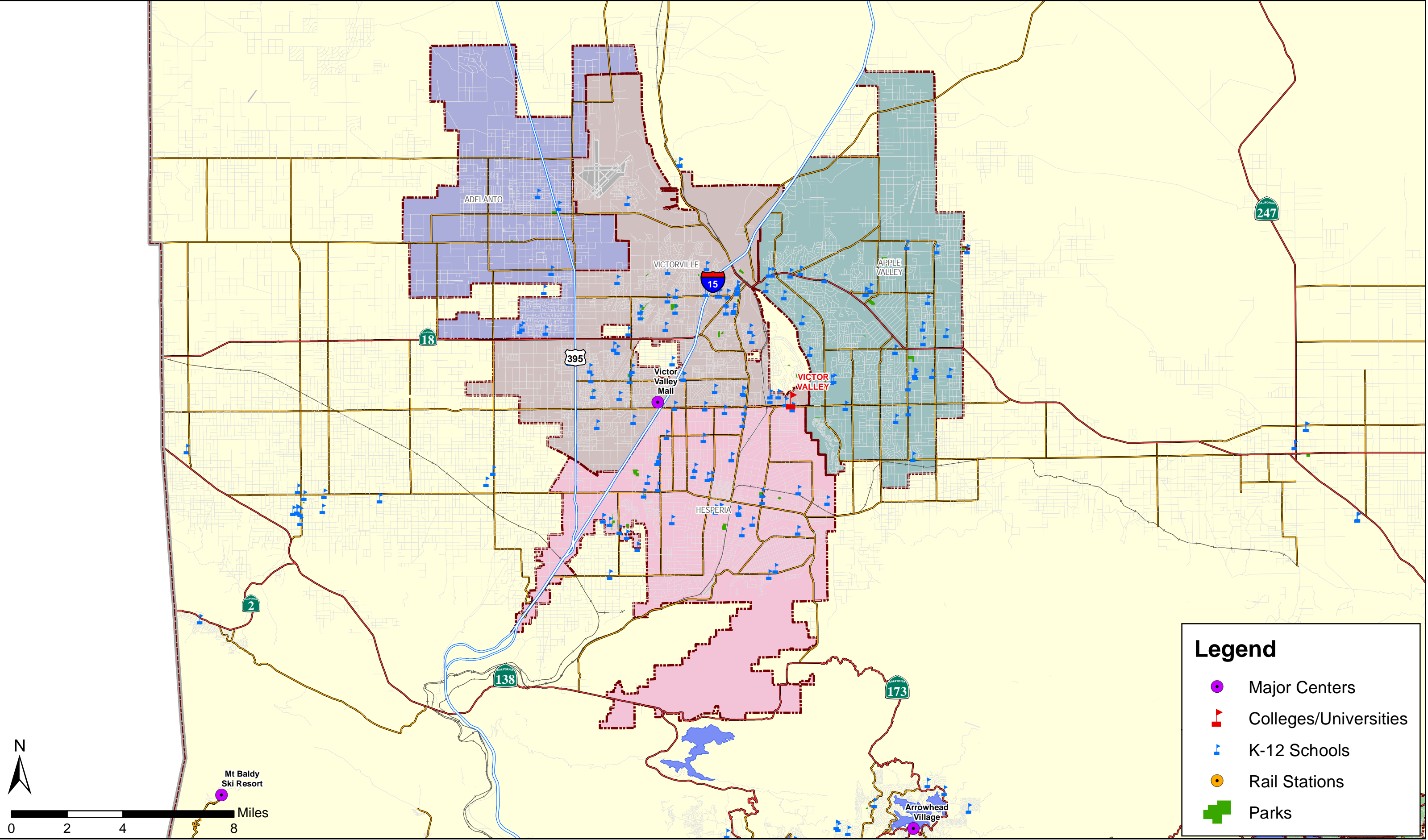
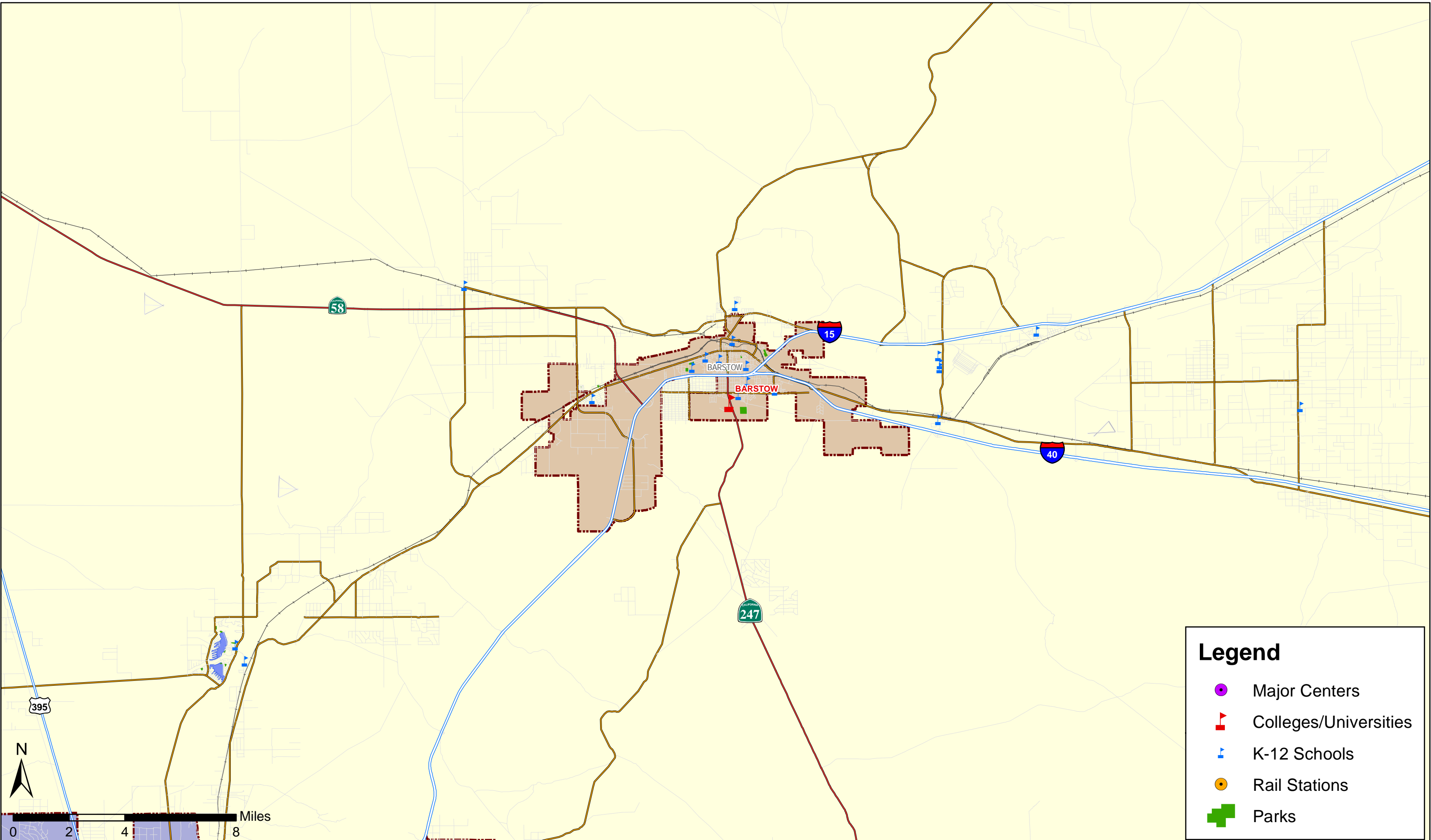


Figure 2.3 Overview Map
Victor Valley



**Figure 2.4 Overview Map
Barstow Area**



**Figure 2.5 Overview Map
Morongo Basin**

Legend

- Major Centers
- Colleges/Universities
- K-12 Schools
- Rail Stations
- Parks

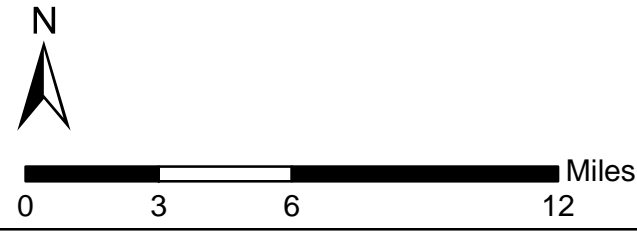
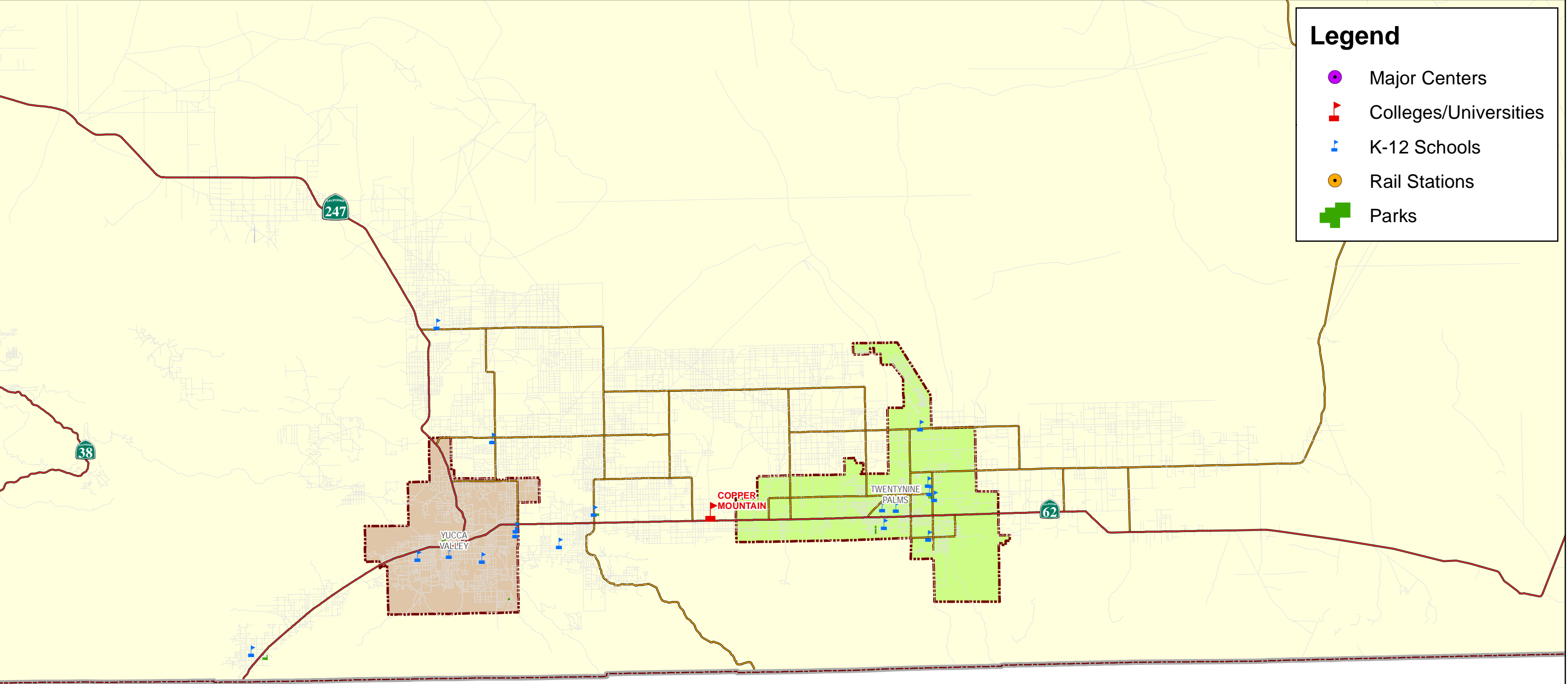
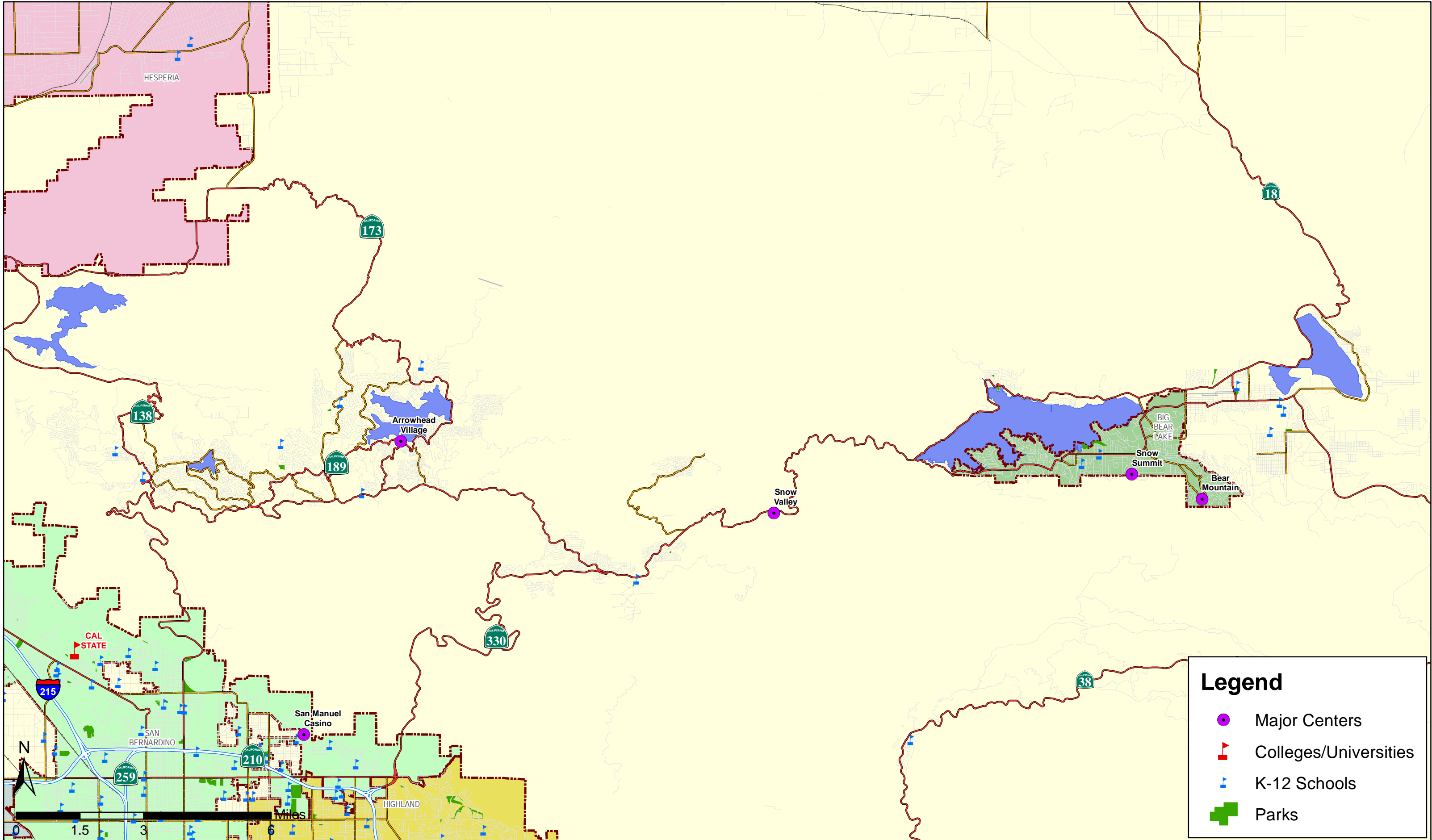


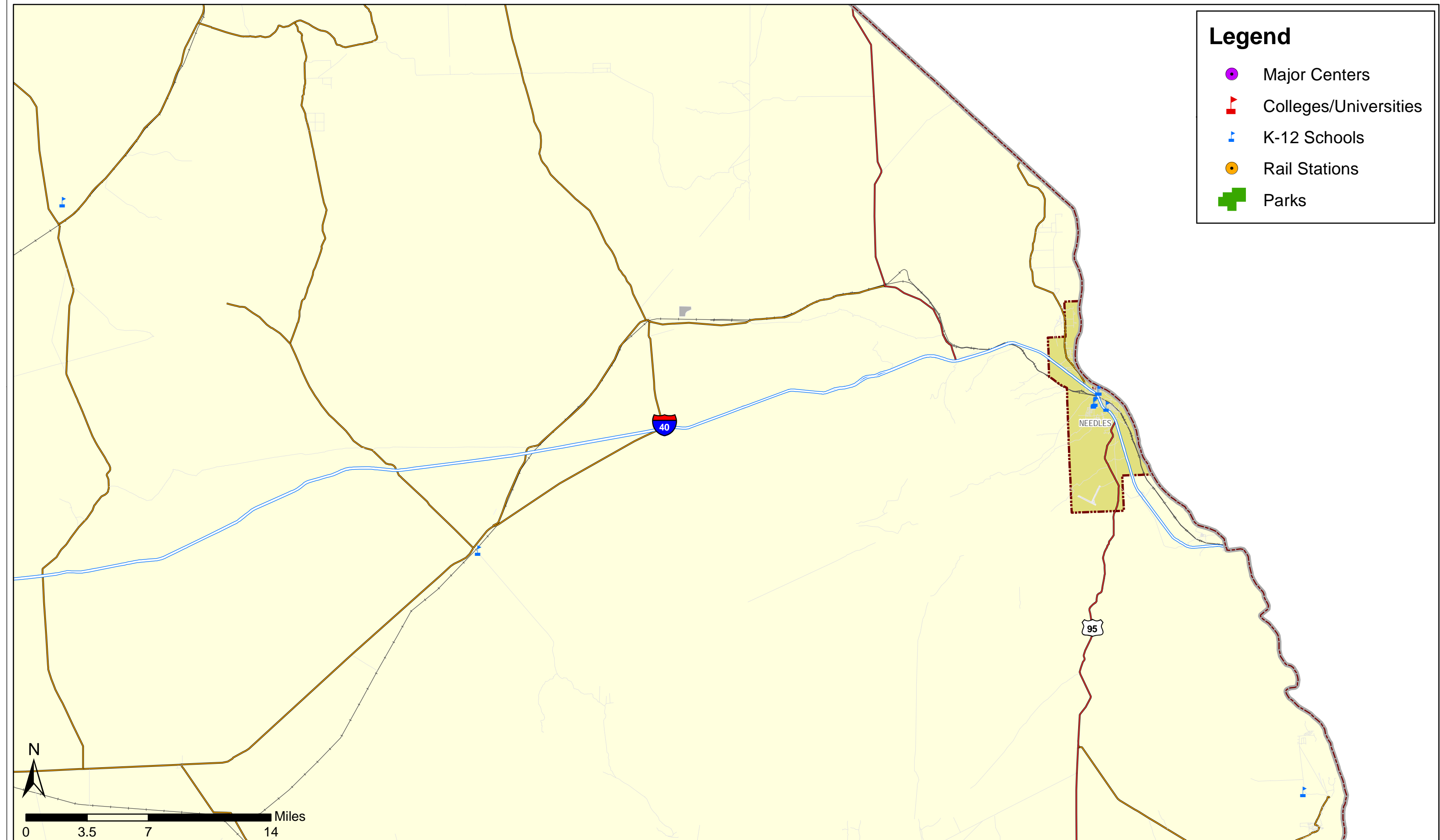
Figure 2.6 Overview Map
Mountain Areas



**Figure 2.7 Overview Map
Needles Area**

Legend

- Major Centers
- Colleges/Universities
- K-12 Schools
- Rail Stations
- Parks



3.0 Bicycle Planning

The specific recommendations of the NMTP include bicycle facility development such as the completion of a regional bikeway network, provision of end-of-trip facilities, development of a regional way-finding system, and support of educational and promotional programs to be implemented over the next twenty years. These are listed more specifically at the end of Chapter 3. Three sections lead up to the listing of these recommendations:

- 3.1 – Classes of Bikeways
- 3.2 – Types of Bicycle Riders
- 3.3 – Estimates of Commuter Bicycle Trips
- 3.4 – Existing Bicycle Network
- 3.5 – Future Bicycle Network
- 3.6 – Recommendations for the Regional Bikeway System

3.1 Classes of Bikeways

San Bernardino County jurisdictions have made substantial progress in providing at least basic bicycle facilities in most of its subregions. All bikeways adhere to the standards described by the Caltrans Design Manual, the American Association of State Highway Transportation Officials (AASHTO) Guidelines for the Development of Bicycle Facilities, and the Manual of Uniform Traffic Control Devices (MUTCD) published by Federal Highway Administration. There are three classes of bikeways, as described below:

- **Class I Bikeway (Shared Use Path or Bike Path):** A bikeway physically separated from any street or highway. Shared Use Paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. For an example, see the figure immediately below.



Figure 3.1 – Class I Bikeway Information

- **Class II Bikeway (Bike Lane):** A portion of roadway that has been designated by striping, signaling, and pavement markings for the preferential or exclusive use of bicyclists. For an example, see the graphics immediately below.



Figure 3.2 – Class II Bikeway Information

- **Class III Bikeway (Bike Route):** A generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel regardless of whether such facilities are designated for the exclusive use of bicycles, or are to be shared with other transportation modes. For an example, see the graphics immediately below.



Figure 3.3 – Class III Bikeway Information

- **Signed Shared Roadway or Signed Bike Route:** A shared roadway that has been designated by signing as a preferred route for bicycle use. These are Class III facilities under the Caltrans Design Standards.

3.2 Types of Bicycle Riders

Despite the advances various cities have made in facilitating bicycling, many individuals still have concerns about the safety of bicycle transportation. Other bikeway plans have used a typology to categorize riders based on their approach to bicycling. A brief description of the four types can be found in below.

Of course there are limitations to any model that puts individuals into categories. The four types are not intended to be rigid characterizations but rather provide insight into potential cycling market segments. A major premise of this plan is that the residents who are described as 'interested but concerned' will not be attracted to bicycle for transportation by the provision of more bike lanes, but may be more willing to ride if a network of low-stress bikeways is provided.

3.2.1 Type 1 - Strong and Fearless

This type of bicyclist (about 1 or 2 percent) will ride anywhere, regardless of the bicycle facility or lack thereof. They are comfortable on busy roads without bike lanes and may – in many circumstances – prefer to have no bicycle facilities at all.

3.2.2 Type 2 - Enthused and Confident

These bicyclists (about 10 percent) are comfortable on busy streets with bike lanes. They are the group that responds to many miles of bike lanes by riding.

3.2.3 Type 3 - Interested but Concerned

'Interested but concerned' bicyclists (about half) include the vast majority of County residents. They may occasionally ride on trails or bicycle boulevards, while on vacation or on an organized group ride. 'Interested but concerned' residents would like to ride more, but are reluctant because they do not feel safe near fast-moving traffic on busy streets, even when bike lanes exist. They would ride if they felt more comfortable on the roadways due to fewer and slower-moving cars or if more car-free alternatives were available.

3.2.4 Type 4 - Not Interested

This type includes approximately a third of residents, who are not going to ride a bicycle for transportation, either because they are uninterested or unable to do so.

3.3 Estimates of Commuter Bicycle Trips

County-level estimates of commuting by bicycle were presented in Chapter 1. City-level estimates of commute trips by bicycle within San Bernardino County are shown in Table 3-1. These statistics are drawn from the American Community Survey, over the period of 2006-2009. The statistics were derived from a survey sample, not the entire population, but were expanded to represent the entire population. Statistics for the unincorporated areas of the County are not included.

The table shows that the percentage of commute trips by bicycle is very low, only 0.4% overall. Only the City of Big Bear Lake had a percentage of greater than 1%. The cities with the highest percentages in the Valley were Chino, Loma Linda, and Redlands.

**Table 3-1. City-level Percentage of Daily Commuter Trips by Bicycle
(Source: American Community Survey, 2006-2009)**

CITY	TOTAL COMMUTE TRIPS	% TRIPS BY BICYCLE
Adelanto	4,650	0.86%
Apple Valley	19,360	0.05%
Barstow	7,880	0.32%
Big Bear Lake	2,365	1.06%
Chino	26,470	0.81%
Chino Hills	31,770	0.17%
Colton	18,355	0.27%
Fontana	46,235	0.21%
Grand Terrace	5,790	0.43%
Hesperia	21,960	0.39%
Highland	16,595	0.30%
Loma Linda	8,090	0.80%
Montclair	12,250	0.65%
Needles	1,650	0.61%
Ontario	60,920	0.61%
Rancho Cucamonga	60,635	0.21%
Redlands	29,335	0.84%
Rialto	31,540	0.17%
San Bernardino	60,600	0.50%
Twentynine Palms	6,180	0.65%
Upland	31,570	0.25%
Victorville	22,025	0.45%
Yucaipa	1,7035	0.23%
Yucca Valley	5,735	0.00%
TOTAL	548,995	0.40%

Selected California cities were also analyzed as a basis of comparison against statistics for cities in San Bernardino County. For example, Santa Barbara has one of the higher rates at 3.1% of commuting trips by bicycle. This might be thought of as an aggressive goal for some of the cities in San Bernardino County such as Redlands and Loma Linda, each of which has a college/university as a major focal point. Davis, California, which has an extraordinary emphasis on cycling, still has a bicycle commuting percentage of less than 10 percent. The City of Sacramento is marginally over 1 percent. It would be significant achievement for San Bernardino County to double its bicycle commuting percentage over the next 20 years.

3.4 Existing Bicycle Network

3.4.1 Overview

San Bernardino County has some excellent non-motorized facilities already in place for both recreation and commuting. The following describes these assets in detail and their relationship to the NMTP.

The growth of the non-motorized system has been substantial during the past decade. In 2001, the combined total of centerline miles of bicycle infrastructure for all jurisdictions was 53 miles. As of 2011, the combined total of centerline miles of bicycle infrastructure for all jurisdictions is 468 miles. This represents an increase of 415 centerline miles and a 780% growth in the County's bicycle infrastructure.

Subarea maps of existing and proposed bicycle facilities are provided in Figures 3-4 through 3-10. The full set of maps may be referenced at the end of this chapter. Additional information and tabular summaries of existing and proposed route mileage are provided for each individual jurisdiction in Chapter 5.

3.4.2 Existing Regional Non-Motorized Assets

San Bernardino County has some excellent non-motorized facilities already in place for both recreation and commuting. The following describes these assets and their relationship to the NMTP.

Pacific Electric Trail

The Pacific Electric Trail is a shared use path for bicyclists and pedestrians located in the San Bernardino Valley. Once used as a right-of-way for the Pacific Electric Rail Line and bought by SANBAG, this path traverses cities in both Los Angeles and San Bernardino counties. Currently the path is paved from Pomona College in Claremont to the eastern city boundary of Fontana. Rialto is planning on extending it further east.

Santa Ana River Trail

Stretching from the Pacific Ocean in Huntington Beach to the Inland Empire, the Santa Ana River Trail is a long Class I Bikeway that connects three counties along the Santa Ana River. The current terminus of the trail is in the Hospitality District of San Bernardino, but plans are underway to extend it into Redlands and Highland.

Flood Control Channels

There are various flood control channels throughout the County. Through an agreement with the Flood Control District of San Bernardino County's Department of Public Works, bicyclists are allowed to use the access roads adjacent to flood control channels when gates are open. These

roads are considered Class I bikeways or share use paths and are an excellent and safe option for the bicycle commuter or enthusiast.

Power Line Corridors

Similar to the flood control channels, paved access roads next to large power lines are legal for cyclists' use when not in use by utility workers or officials from Southern California Edison or the Los Angeles Department of Water and Power. There is no danger of radiation or electrical hazard by bicyclists or pedestrians under power lines.

Cajon Pass Connector – Route 66 Heritage Trail

Although not yet fully realized as a complete Class I Bikeway, the Cajon Pass Connector will someday connect the Victor Valley to the San Bernardino Valley via the Cajon Pass. Once complete, this bikeway will provide a seamless and safe method of bicycle transportation from the Glen Helen area to State Route 138 on the Historic Route 66 (Cajon Boulevard).

Orange Blossom Rail Trail

Just like the Cajon Pass Connector, the Orange Blossom Rail Trail is an incomplete Class I Bikeway. With sufficient funding and planning, this bikeway through Redlands will provide exceptional multimodal connectivity to the nearby Santa Ana River Trail and the planned Redlands Rail.

End-of-Trip Facilities and Bicycle Connections to Transit

Figures 2-1 through 2-7 identified locations of significant bicycle trip destinations. Most of these locations include bicycle racks. Bike lockers exist at several Metrolink stations in San Bernardino County. Selected office buildings may provide showers and facilities to change and store clothes, but the specific locations have not been documented at a comprehensive level. See Chapter 5 local plans for more specific info on end-of-trip facilities. In addition, all Omnitrans buses provide two bicycle racks for easy access/egress of the bus system by cyclists. Metrolink trains allow bicycles to be stowed on-board. This will also be true of the future Bus Rapid Transit network in the City of San Bernardino.

3.5 Future Bicycle Network

In addition to the above-mentioned existing regional assets that span across cities, many jurisdictions have developed their own Class I, Class II, and/or Class III bikeways. Collectively, these represent the bikeways portion of the NMTP. Figures 3-4 through 3-10 showcase these future facilities at the subarea level. Table 3-2 summarizes the total centerline mileage of existing and planned bicycle network by class. These mileage totals represent a summation of those in the individual jurisdiction plans. Because some of the planned facilities represent conversions from one class to another, the total existing plus planned is a slight over-counting of the actual mileage expected when the plan is complete.

Table 3-2. Summary of Existing and Planned Bicycle Network Centerline Mileage

(Note: Total existing plus planned represents a slight over-representation of the future network totals – see text.)

	Class I	Class II	Class III	Total
Existing	78.1	270.1	116.3	464.5
Planned	277.9	756.6	247.6	1282.1
Total	356.0	1026.7	363.9	1746.6

The local jurisdiction plans in Chapter 5 are drawn from the subarea maps and provide a more detailed discussion on specific bikeway facilities, end-of-trip facilities, and project priorities, where appropriate. Chapter 6 addresses design considerations when implementing bicycle facilities. Chapter 7 presents an overall implementation strategy and priorities.

3.6 Recommendations for the Regional Bikeway System

Specific project lists, recommendations, and priorities are contained in the individual jurisdiction bicycle plans in Chapter 5. This section provides recommendations that are regional in nature, with emphasis on the physical infrastructure in San Bernardino County. Chapter 7 presents an implementation strategy that takes these a step further, and provides regional priorities.

1. Deliver the Class I, II and III identified in the subarea maps referenced in Chapter 3. Although the Class I facilities can be considered a backbone bicycle system, there is much more to the network than just Class I facilities. Other types of facilities can also be delivered more quickly and less expensively, improving regional connectivity.
2. Develop better bicycle connectivity between cities and subareas of the County by coordinating the location and staging of network improvements. This must include improved collaboration with Caltrans, given the number of State highways connecting the subareas. Connectivity on Class II and Class III bicycle facilities can be increased by prioritizing the “low-hanging fruit” – parts of the regional system that are low-cost, close gaps in the system, and provide connections to key destinations.
3. Develop a better “sense of a system” through improved signage, markings, and way-finding for both cyclists and pedestrians.
4. Develop an improved inventory of end-of-trip facilities, particularly at transit stations, schools, other public buildings, and major employment centers.
5. Proactively coordinate integration of cycling and walking accommodations with the State’s Complete Streets requirements.
6. Proactively coordinate integration of cycling and walking access accommodations to and from transit stations.
7. Continue safety education and promotion of cycling through schools, newsletters, and public websites.

Figure 3.4 Bicycle Facilities
East Valley

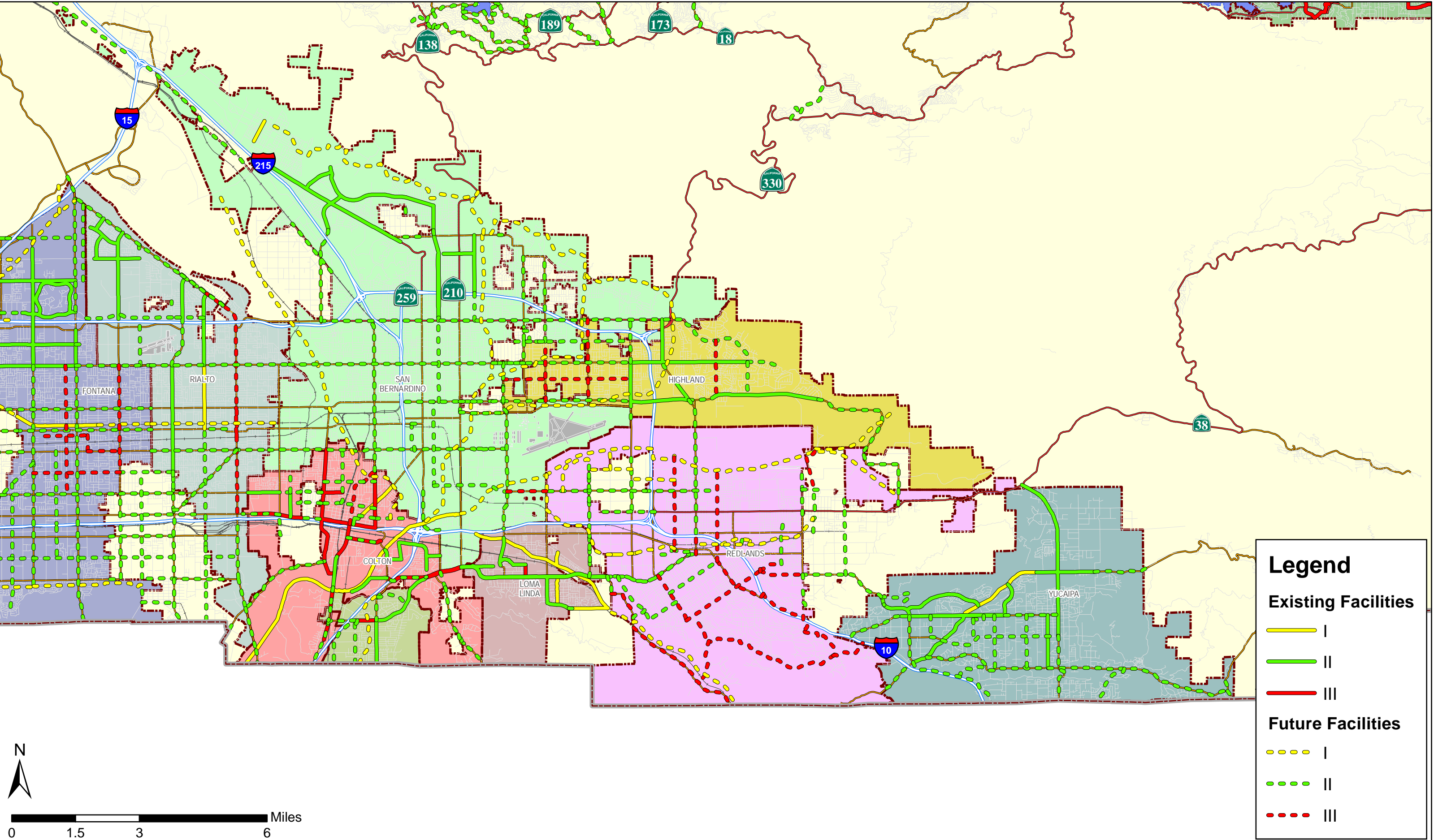


Figure 3.5 Bicycle Facilities
West Valley

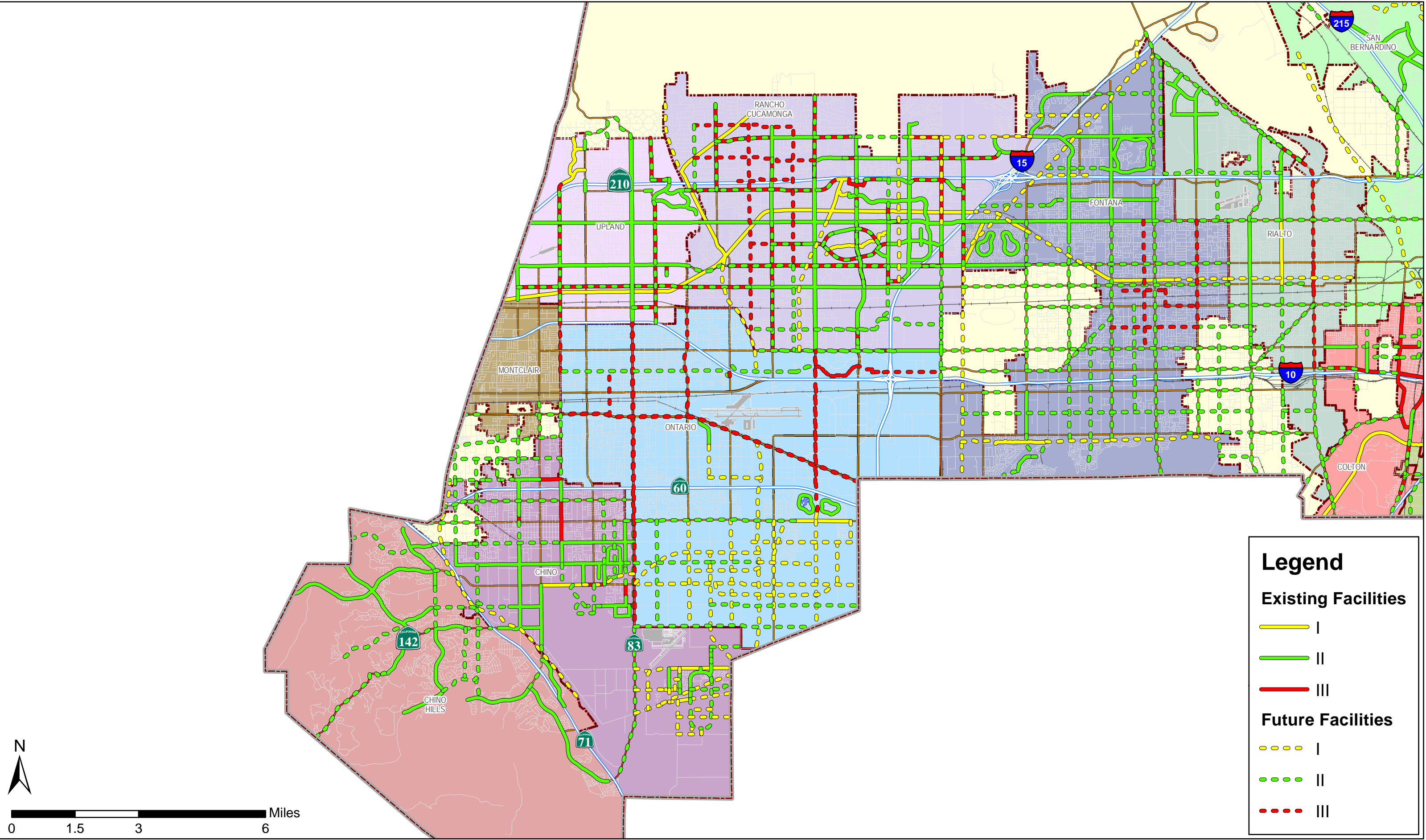


Figure 3.6 Bicycle Facilities
Victor Valley

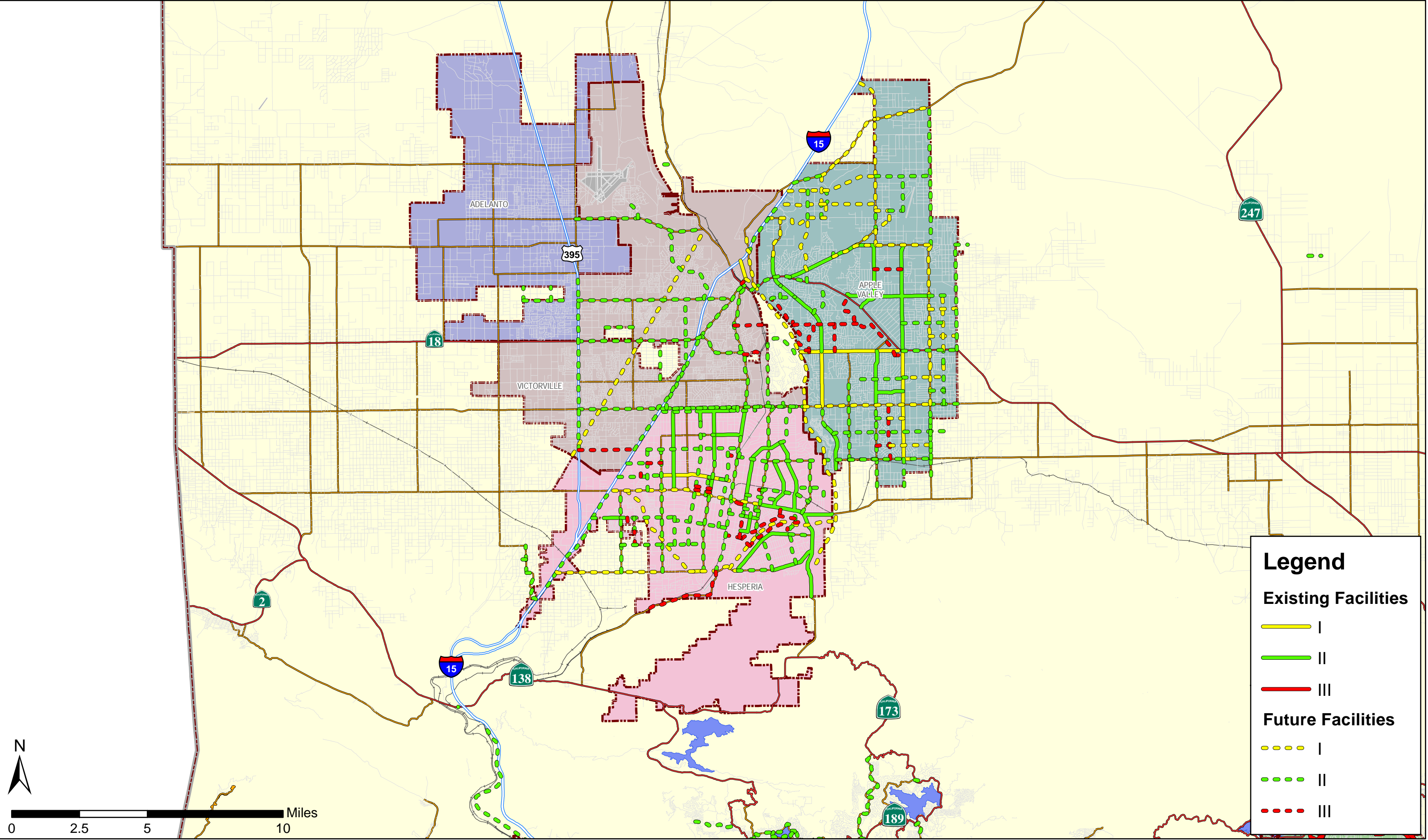


Figure 3.7 Bicycle Facilities
Barstow Area

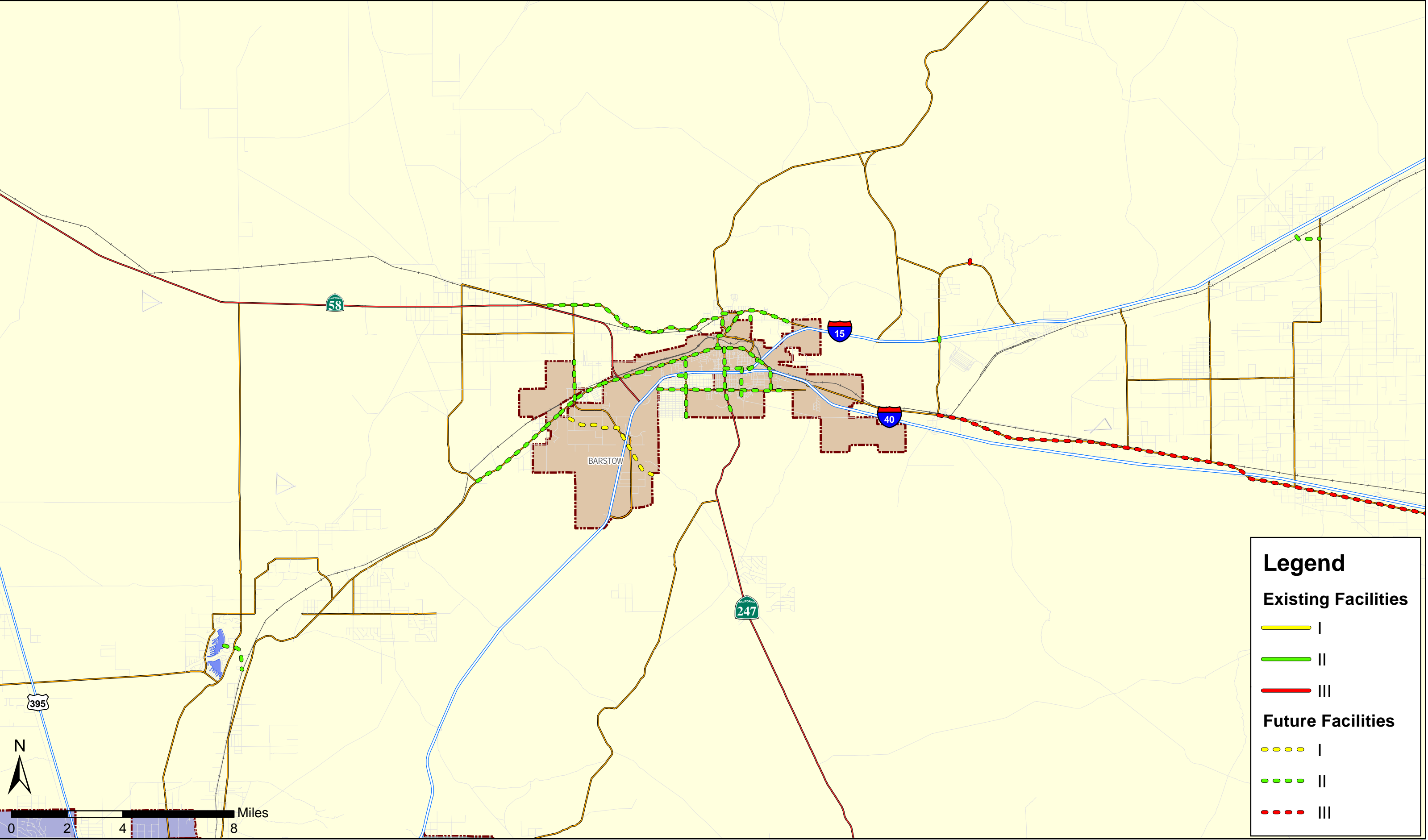


Figure 3.8 Bicycle Facilities
Morongo Basin

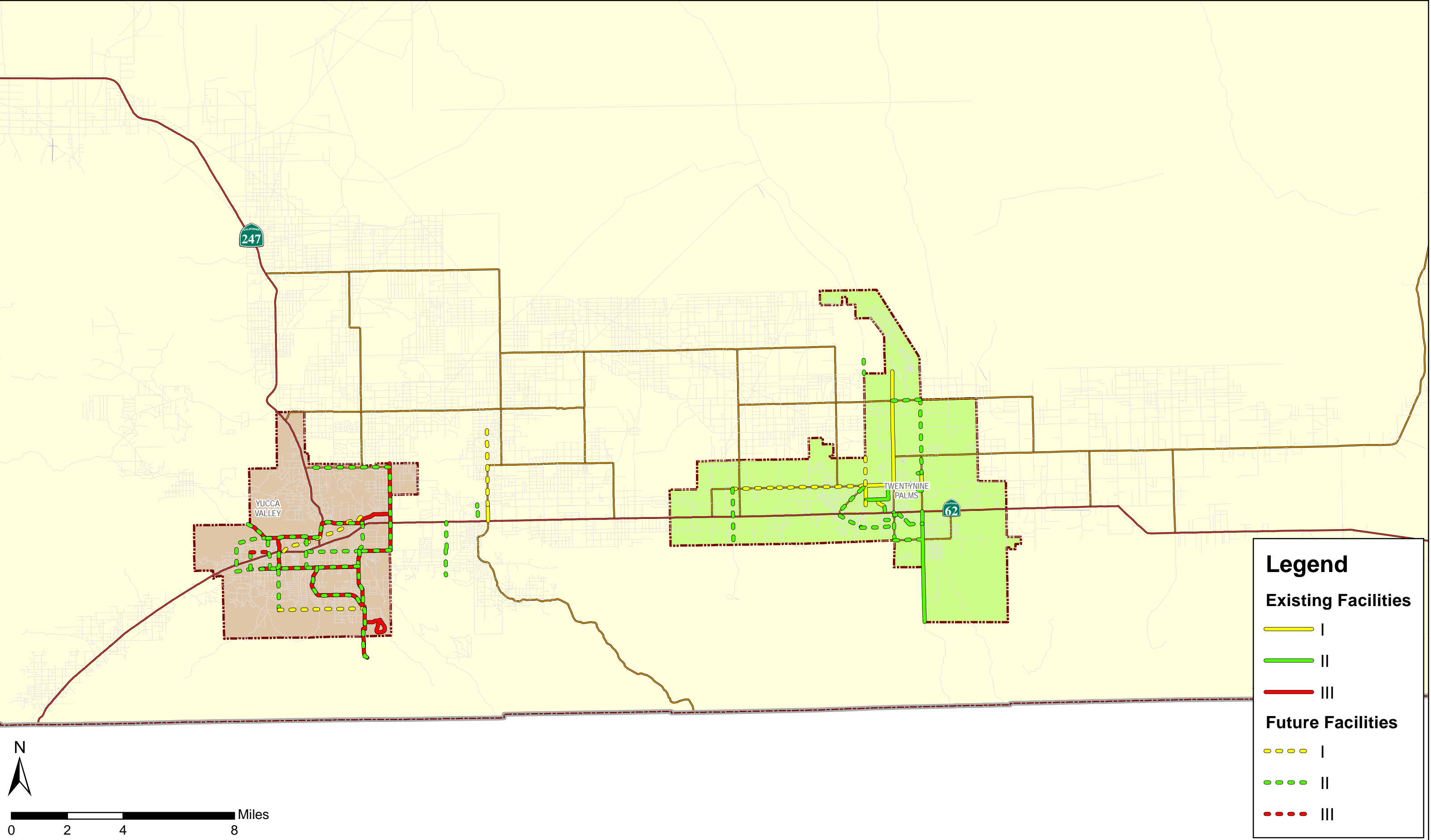


Figure 3.9 Bicycle Facilities
Mountain Areas

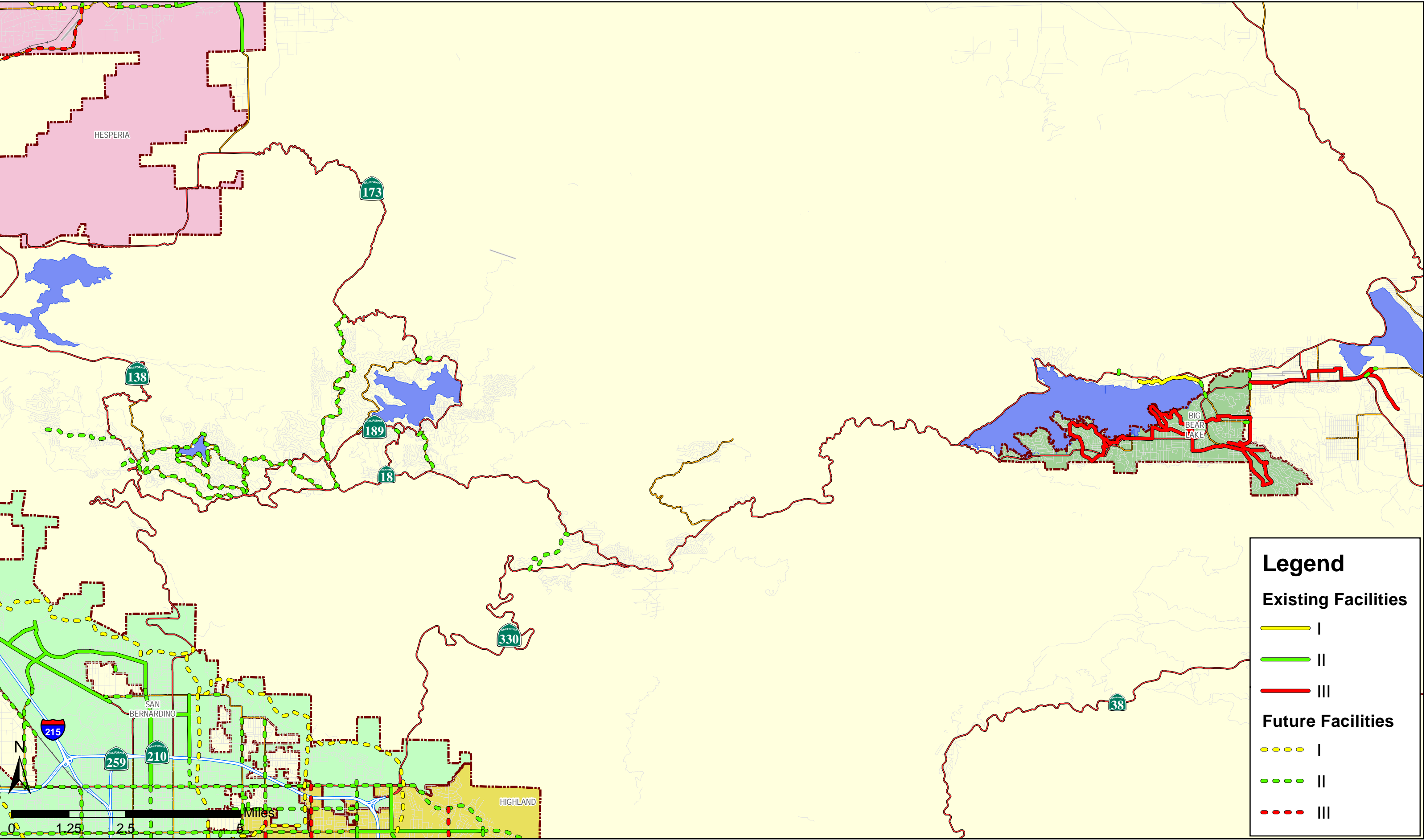
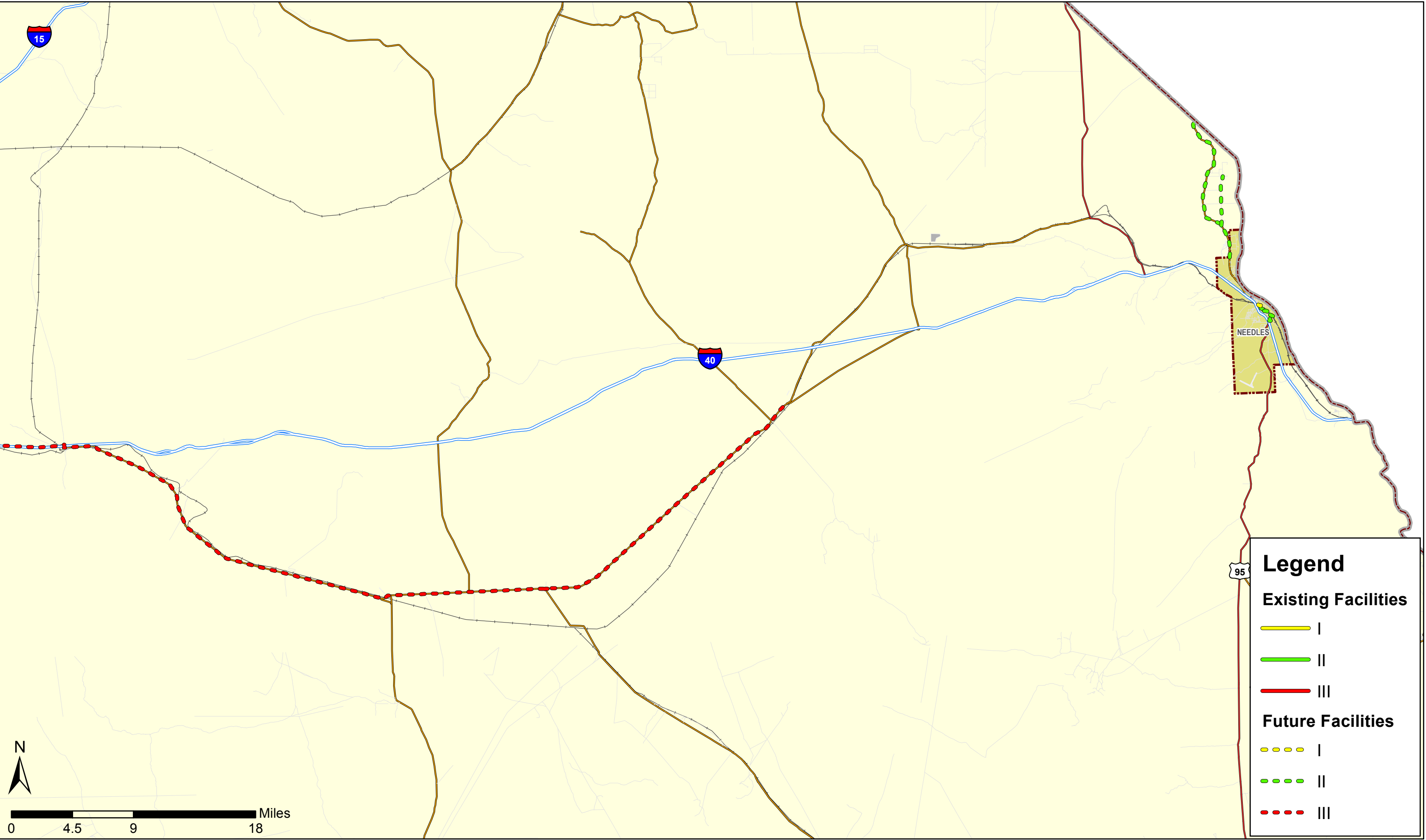


Figure 3.10 Bicycle Facilities
Needles Area



4.0 Pedestrian Planning

4.1 Issues in Pedestrian Access and Mobility

It is often perceived that pedestrian transportation is essentially a local concern, given the length of most pedestrian trips and the manner in which these trips are usually contained within a given area, whether that area is a schoolyard, a shopping center, a college campus or a downtown business district.

At the same time, federal legislation and funding programs reminds us that regional, state and federal levels of government all have a stake in designing the multi-modal transportation system to serve the needs of all travelers. It is often said that pedestrian planning is a part of “alternative transportation planning,” yet there is no more basic mode of transportation than getting around on foot. Indeed, no trip involving a car, bus, train, airplane or other mode can even begin without a pedestrian journey taking place. Regional transportation facilities such as airports and transit stations must be designed around the needs of the pedestrian if they are to fulfill their mission.

Unfortunately, as American society moved to develop the systems necessary to accommodate the automobile, many of the values associated with pedestrian transportation have been diminished, if not lost. This is not a phenomenon unique to Southern California. As highway and street design standards have evolved over the past fifty years, the problems of insufficient pedestrian access, diminished safety and difficult trip making have been repeated across the country.

City-level statistics on commute trips by walking within San Bernardino County bear this out, as shown in Table 4-1. The percentage of commute trips by walking are drawn from the American Community Survey, over the period of 2006-2009. The statistics were derived from a survey sample, not the entire population, but were expanded to represent the entire population. Statistics for the unincorporated areas of the County are not included.

The table shows that the percentage of commute trips by walking is very low, less than 1% overall. Some of the smaller communities actually show larger walk trip shares, presumably because the work locations and homes are fewer and therefore in closer proximity. However, caution should be exercised in reading too much into the data for the cities with smaller sample sizes. Loma Linda has the highest walk trip percentage in the Valley, at 2.3%. This is consistent with presence of the large hospital and educational complex in Loma Linda. The City of Redlands was next, with 1.7% of commute trips by walking. The City of Big Bear Lake was shown to have the largest walk trip percentage at 7%.

It is not possible for a single regional plan to either identify all the liabilities and shortcomings of the pedestrian environment or to plan and fund their correction. Many of the issues and concerns are appropriately addressed at the local or even neighborhood level. At the same time, this plan can identify priorities for the use of regionally administered funds to meet common regional needs.

For purposes of this plan, the following activities are considered regional priorities for pedestrian planning and project development:

1. Improving pedestrian access to transit;
2. Removing existing barriers to pedestrian travel;
3. Development of regional trails and pathways which provide improved pedestrian access to destinations;
4. Improvement of the pedestrian environment on major regional arterials and at regional activity centers.

**Table 4-1. City-level Percentage of Daily Commuter Trips by Walking
(Source: American Community Survey, 2006-2009)**

CITY	TOTAL COMMUTE TRIPS	% TRIPS BY WALKING
Adelanto	4,650	1.6%
Apple Valley	19,360	0.8%
Barstow	7,880	2.7%
Big Bear Lake	2,365	7.0%
Chino	26,470	1.4%
Chino Hills	31,770	0.3%
Colton	18,355	1.0%
Fontana	46,235	0.6%
Grand Terrace	5,790	0.2%
Hesperia	21,960	0.2%
Highland	16,595	0.5%
Loma Linda	8,090	2.3%
Montclair	12,250	1.2%
Needles	1,650	4.2%
Ontario	60,920	0.8%
Rancho Cucamonga	60,635	0.6%
Redlands	29,335	1.7%
Rialto	31,540	0.9%
San Bernardino	60,600	1.4%
Twentynine Palms	6,180	1.2%
Upland	31,570	1.0%
Victorville	22,025	0.3%
Yucaipa	1,7035	0.6%
Yucca Valley	5,735	1.0%
TOTAL	548,995	0.9%

4.2 Regional Pedestrian Facility Programs

The following program concepts describe potential elements of a regionally based pedestrian transportation effort:

4.2.1 Transit Access

One of the most significant regional benefits of improved pedestrian access and safety involves the support of local and regional transit systems. All transit agencies rely heavily on pedestrian access as a core of their ridership base, indeed, public transit is a safety net for those citizens who do not have access to an automobile.

It is critical that this core customer base have access to transit service, yet in many, if not most areas of San Bernardino County, there are few efforts being made to ensure that pedestrians have systems which promote safety, continuity, connectivity and accessibility. Local jurisdictions should work cooperatively with transit agencies to assess walking conditions within 600 – 1200 feet of any transit stop. Most transit patrons are willing to walk at least this distance if facilities are present and safe. Local transit systems also have an interest in working with local jurisdictions to ensure that there is an ADA compatible access route to all transit stops, including pads adequate in size to accommodate wheelchair loading systems while maintaining a clear walking path.

In addition, land use codes can do much to ensure that new development serves the needs of transit. In new residential subdivisions, care should be taken to ensure that pedestrians can walk within a reasonable distance to access local transit service. This can be provided by including “pass-through” pathways between cul-de-sac streets and adjacent arterials. While many residential developments minimize vehicular access in an effort to cut down local “cut-through” traffic, these same developments must maintain good pedestrian access to destinations within and adjacent to the development.

Commercial development also can provide a significantly more amenable environment for pedestrians through careful site planning. Orientation of business entrances to the street can make for a quicker pedestrian trip from transit to destination, while inclusion of overhangs, shade, and shelter near transit stops can make for improved and pleasant waiting times for transit patrons. Many communities encourage development of businesses such as newsstands, coffee shops and cafes near major transit stops and centers to make these facilities more active, safer and more pleasant.

A significant initiative of SANBAG and local jurisdictions is to plan for more walkable communities within and around transit station areas. This is being accomplished through the development of the Sustainable Communities Strategy (SCS), which will become part of the SCAG Regional Transportation Plan. The SCS is looking at better ways to plan land use around transit stations and to provide ped/bike connectivity and amenities that encourage non-motorized modes. The SANBAG Long Range Transit Plan provides mapping of existing and future transit alignments and station areas around which this planning may occur. A map of the future LRTP system was presented in Chapter 1.

4.2.2 Preventing and Eliminating Barriers to Pedestrian Travel

Planning for improved pedestrian access is relatively simple, but often overlooked. One needs to simply think about the directions/destinations from/to which people are walking and determine how to accommodate those paths. This is best done at the “prevention stage” through good site planning, to include both internal and external pedestrian circulation. It is more difficult and costly to eliminate barriers once they are there.

But the stage can be set with some overarching principles and guidelines. The document *PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System* (Federal Highway Administration report FHWA-SA-04-003, September 2004) provides many examples of pedestrian design treatments suitable for use throughout San Bernardino County. Chapter headings include:

- Pedestrian Facility Design: Sidewalks and Walkways, Curb Ramps
- Roadway Design: Bicycle Lanes, Roadway Narrowing, Lane Reduction
- Intersection Design: Roundabouts, Intersection Median Barriers
- Traffic Calming: Curb Extensions, Chicanes, Speed Tables

Information on PEDSAFE may be found at the following link:

<http://www.fhwa.dot.gov/research/deployment/pedsafe.cfm>

4.2.3 Development of Regional Trails and Pathways

From the pedestrian perspective, the development of trails and pathways can provide an important supplement to other local efforts and systems to improve pedestrian facilities. Such facilities, to have a significant pedestrian benefit, must connect numerous destinations and trip origins within reasonable walking distance, provide a unique access not afforded by other street and sidewalk systems and should be a more pleasant and safer place to walk than other existing alternatives.

Many trails utilize existing corridors such as abandoned rail lines, power corridors, pipelines and even limited access rights of way. Other communities have built smaller walkways through downtown areas through dedication of a narrow strip easement on one property edge, allowing development of a pathway system to occur over time as properties develop in a business district.

4.2.4 Providing a Better Pedestrian Environment on Major Regional Arterials and at Activity Centers

Clearly, a number of strong regional and local interests converge at locations with high activity, whether the activity is in the form of auto traffic, pedestrians, or where many business and employers locate. From the regional perspective, the improvement of these corridors and districts can assist transit agencies, business development districts and traditional downtowns.

Many examples exist of improvements to Main Street districts throughout the County. New business developments seek to create a vibrant, busy sense of place in indoor malls and centers; trying ultimately to replicate the environment of the successful downtown street. Such districts are an important amenity to support regional transit efforts, as concentrations of activity allow transit to effectively serve larger numbers of commuters, shoppers and visitors with a more efficient system.

While there are many examples of pedestrian malls that have developed in Southern California in the past 40 years, it is not necessary or obligatory to ban automobiles entirely to create a more attractive downtown or business district. While successful projects such as the 3rd Street Promenade in Santa Monica do exist, similarly successful projects have retained auto access while simultaneously created more pleasant pedestrian environments through expansion of walkways, introduction of more street level activity, preservation of street trees and shade and the promotion of activities such as street fairs and farmers markets to create the energy needed to make these districts a commercial as well as transportation success.